AMERICAN ANNALS

OF

The Deaf,

EDITED BY

EDWARD ALLEN FAY,

UNDER THE DIRECTION OF

J. WILLIAMS, OF CONNECTICUT, R. O. JOHNSON, OF INDIANA, J. E. RAY, OF NORTH CAROLINA, A. L. E. CROUTER, OF PENNSYLVANIA, AND D. W. McDERMID, OF MANITOBA,

Committee of the Conference of Superintendents and Principals of American Schools for the Deaf.

VOL. XLIV, No. 5.

SEPTEMBER, 1899.

WASHINGTON, D. C.

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FACIAL SPEECH-READING.*

IN proceeding now to give the external characteristic features presented by *consonants*, the stopped or shut sounds more especially, I must again revert to the differences existing between *media* and *tenuis*, already mentioned. Of importance to us are (1) the difference in the consistence of the parts which make the stoppage or closure and the forms and modes of contact thus assumed by the mouth organs (Thausing), and (2) the nature of the release of contact, because both of these differences plainly manifest themselves in visible positions and movements.

In regard to the differences first named, the statement I have already made holds good in general: In the *mediæ* larger surfaces part from one another than in the *tenues*. That these diverse forms of contact are recognizable through external indications is evidenced by the fact that the lower jaw, in order more readily to secure for the parts in question greater surfaces of contact, must assume a more elevated position for the *mediæ* than is requisite for the *tenues*.

That the differences in releasing the closure are really visible can certainly not be questioned.

* Continued from the June number of the *Annals*, page 285.

B and P.

Inasmuch as the lips when pronouncing B are of a tender consistence, their muscles must not appear especially tense. In fact we see, in the B closure, that the lips are almost in the passive position they assume for A (as in mama). The edges of the lips do not press against the teeth; in front we see the wide red surface of the lips; and from the side, the conical shape of the *atrium*. In pronouncing P, on the other hand, the lips are pressed somewhat together, and their edges as a rule are incurved, so that they are drawn against the teeth, and by means of this point of support the pressure is promoted (Merkel). Through this contraction of the muscles the P receives a hard consistence. In contrast to B, we thus see from the front the red portion of the lips narrowed in P; while, from the side, we observe the lips so drawn against the teeth that the conical form of the *atrium* entirely disappears. Although this shows that the point of contact in B is very different from that of P, the fact is nevertheless further emphasized by the circumstance that, in pronouncing P, the lower jaw maintains very nearly its passive position, while in B it is raised somewhat in order to favor the enlargement of the surface of contact. In contrast to B, we thus in P see, in front, the chin elevated; on the side, the lower jaw takes a higher position; finally, the third notable characteristic is the mode of explosion. While in B we see, in front, a forward* rolling and then a parting and raising of the lips, we observe in P that the closure is explosively opened. As a consequence of this different mode of explosion, we observe, also, that the lower jaw makes far less of a downward movement in B than it does in P. A side view gives us this movement more plainly; and

*In pronouncing B, the main direction of the movement is forward, while in P it is downward.

what emphasizes this difference between B and P still more is the fact that, previous to the explosive opening of the lip closure for P, a slight inflation of the cheeks takes place. I am of the opinion that this feature, in connection with the side-view characteristics already described, amply suffices to distinguish B from P, even when the mouth is covered. A practical test will give proof of this apparently bold assertion.

D and T.

While, at the point of closure in the first articulation division, the *media* is clearly distinguishable from the *tenuis*, this is changed more and more the farther back the closure takes place. Practice will here have to contribute the most towards its acquirement. Nevertheless, from the point of view here indicated there will be ample criteria for the eye to enable one to base the practice upon physiological grounds, and avoid the necessity of leaving expertness in speech-reading to blind chance. I would further remark that my statement refers to Brücke's so-called palatal or alveolar D and T, as it is this which is almost exclusively spoken here in Northern Germany, while the people of Central Germany almost universally form the so-called dorsals (Merkel). The manifestations, however, are readily transferred from one to the other.

The difference in consistence shows itself in this way: the tongue seen from in front, between the two rows of teeth, is less visible in D than in T. In uttering the latter, the tongue must take on a harder consistence, in consequence of which its under surface is more exposed than in the corresponding *media*. This of course is not visible from a side view; but, on the other hand, the effect of the greater surface of contact shows itself quite clearly by the elevated position of the lower jaw.

While in T—in which the tongue, board-like, is extended

from back and low towards front and high, and only touches with its edge the articulating position—the lower jaw remains in its position of inaction, or, in a more decided utterance, is moved downward, in D it must elevate itself. For here the place of articulation is touched with a flattening of the point of the tongue, and in order to facilitate this contact it is necessary that the lower jaw elevate itself from its quiescent position. Of course we see this changed position of the lower jaw also in front, but not as clearly as from the side.

Furthermore, the difference in the explosion is mainly rendered observable by the movement of the lower jaw, which in D is hardly discernible, but in T appears quite excessive. While this, from a side view, is only apparent by the movement of the lower jaw, it is, in front, presented to us by the distance from each other of the two rows of teeth. In addition, however, we also observe clearly that the explosion, in uttering T, causes the tongue to be thrown downward, while in uttering D its motion is backward. This causes us also to observe from the side that, in consequence of the muscle movement, the angle between the lower jaw and the front throat-surface is blunted and more rounded in D, whereas in T the angle remains the same, and we only observe upon the side of the throat just previous to the explosion a slight fluctuation of the skin, like that manifested in P upon the cheek surface.

We are to consider, furthermore, whether D and T are also distinguishable when the mouth is covered. Here, too, after the careful and repeated observations I have made, I must assert that they are. I need only refer to the diverse positions and movements of the lower jaw, as also to the angle of the throat and lower jaw, to prove this assertion. Nevertheless, as I have already observed, it is rather difficult to attain perfect speech-reading in the T genus. Practice must here serve as a substitute for the readier visibility of externally distinguishing features.

G and K.

While in the T genus the point of the tongue lies back of the upper row of teeth, in the K genus it lies back of the lower row. This being understood, the G distinguishes itself from the K, in the first place, by the consistence of the articulating organ—in this instance the tongue. Thus, while in K, owing to its rigidity, one sees the entire ridge of the tongue exposed, in G one sees only a small portion of it. The area of contact is much larger in G than in K, where there is only a faint line of contact. In front this difference is made visible in the manner just described in speaking of the consistence of the articulating parts. In addition, we see the lower jaw more elevated in G than in K. In the former the jaw supports the securing of a larger area of contact, while in K, owing to the rigidity of the tongue, the jaw is rather thrust downward. In general, therefore, in front we see the two rows of teeth wider apart in K than in G; and on the side we observe the lower jaw higher in G than in K, being somewhat depressed in the latter. The angle of the lower jaw and throat is drawn upward in both sounds, but more so in G than in K.

Finally, the difference in the process of releasing the closure asserts and manifests itself externally. In G we see in front a depression of the ridge of the tongue, and in K, a lowering and thrusting forward of it. This is why the movement of the lower jaw is greater in K; it is noticeable in front by the movement of the two rows of teeth and the chin; it is noticeable from the side upon the lower rim of the lower jaw, and especially upon the angle of the lower jaw and throat. In K a fluctuating movement of the skin (Merkel) is clearly visible upon the lateral surface of the neck, previous and subsequent to the explosion, while nothing of the kind is observable in G. The movement of the angle of the lower jaw and throat is greater in K than in G.

Fricative or Spirant Sounds.

As in the stopped sounds we have distinguished hard and soft consonants, we can also make a like distinction in the fricative sounds; since, for the purpose of facial speech-reading, the ordinary distinction between voiceless and vocal fricative sounds is immaterial. The hardness of the fricative organs is equally visible with that of the stopped sounds; for instance, we can easily convince ourselves, by means of the eye, how in F and P the lips assume a far more firm consistence than in W (English V) and B, where they are "more or less soft and pliable," says Thausing. Apart from the consistence, consideration must also be given to the size of the limiting surfaces; these, for instance, are considerably larger in F than in W. Finally, the transition from F to A is totally different in appearance from that of W to A; the first named, owing to the stronger pressure of air, produces a more passive impression, while the latter shows an active muscle movement. Taking all into consideration, we have in the fricatives the same points of view by which we distinguish between the voiceless and vocalized, just as we distinguished the *tenues* from the *mediæ*.

F and W (English V).

With F we see the upper lip elevated and made tense, so that its lower edge is brought up to a level with the crown line of the upper row of teeth. The two rows of teeth separate somewhat, owing to a backward and downward movement of the lower jaw. This is done in order to enable the lower lip to be curled inward, and over the lower row of teeth. Thus it is that the lower lip comes to lie quite loosely against the upper row of teeth. In W (English V), however, the two rows of teeth only come to be separated from one another about the same distance

they are in E (English A); the lower jaw therefore takes a more elevated position than in F, and so facilitates the formation of a larger surface for the walls of the aperture. The lips are not quite as tense as in F; they take a position similar to that in A (as in mama), only the lower lip approaches the lower row of teeth somewhat, but is not drawn inwardly so much as in F. Thus "the length of the mouth aperture is diminished, and the corners of the mouth are brought towards each other," says Merkel. In F, on the other hand, the mouth aperture retains its ordinary length.

In front, therefore, we see, when F is uttered, the red exposure of the lips lessened, the chin lower and the corners of the mouth in their usual position; whereas in W (English V) the red exposure of the lower lip is rather broadened, the chin is elevated, and the corners of the mouth are somewhat contracted. A side view reveals the fact that in F the *atrium* nearly disappears, while in W it is preserved and the lips retain their ordinary shovel-like form. While in F the downward and backward movement of the lower jaw is mainly noticeable, in W the jaw is raised in addition to moving backward as has been already explained. In the transition to a vowel, we see in W a forward trend, which in F is still more decided. Of course the backward movements of the lower jaw are observable alike from a side view and when the mouth is covered, although at first it is somewhat difficult to distinguish a voiced fricative from a vowel.

SS and S.*

Merkel says: "The easiest and most common way to form S is as follows: The two jaws are so brought together that the two rows of the teeth are near each

* The German SS has no exact equivalent sound in English, but will be readily recognized upon closely observing the remarks here made.

other, or, if they had previously been separated, they are brought towards each other in such a manner that the uncovered crowns or edges of both lines of teeth lie in one and the same horizontal line, and the edges of the lower incisors take a position in the rear of the upper ones, although, more especially if the S sound is less prominent, the edges of the upper incisors stand off a little from the lower."

In front, we see in SS the two rows of teeth quite close to each other, but in S they stand slightly apart from each other in such manner that the lower teeth take position in the rear of the upper ones. We also invariably see that, when the lower jaw shifts from its passive position into that of S, the chin projects. Most frequently it will also be observed that, in assuming the S position, a broadening out of the mouth aperture takes place. This, of course, is plainly visible from the side, where we observe a backward movement of the corners of the mouth, and, at the same time, a forward movement of the lower jaw—a movement which, in the vocalized S, is coupled with a yet more decided upward movement of the lower jaw than is the case in voiceless SS.

These characteristic features are sufficiently discernible even when the mouth is covered. Altogether, the S of itself is easily read, although the difference between the vocalized and voiceless S is not near as pronounced as that between F and W. For purposes of speech-reading, however, it matters not whether the vocalized S is distinguished from the unvocalized or not.

*CH and J.**

It is very difficult to distinguish these two sounds from one another or from others. The place of articulation is located nearly where the vocal tube is contracted in form-

* The German CH has no exact equivalent in English; J is the English consonant Y.

ing the vowel I (English E). It is true that in uttering CH "the tongue is also drawn upwards and backwards toward the soft palate" (Merkel). This also compels the lower jaw (which, we have already seen, retreats upwards) to elevate itself even more. It is from this position of the lower jaw that we must learn to read these two consonants. These two positions of the lower jaw can, naturally, be best observed from a side view. It will also be seen that the *atrium* is so extremely diminished as almost to disappear, which constitutes another similarity to the I (English E) position, and is caused by the backward movement of the lower jaw; however, the corners of the mouth are not drawn up as high as in the I position. In the utterance of I, the two rows of teeth, viewed from the front, are further apart than in CH or J. Hence, in the utterance of the word "*ich*," we see the two rows of teeth further apart in I than in CH. Neither is the mouth aperture as broad in CH as it is in I, which difference, of course, is observed only in a specially distinct utterance. I do not consider it very essential for the purpose of speech-reading to be able to distinguish CH from J.

SCH (*English SH*).

This is another easily read consonant, alike in front or from the side, and also with covered mouth. Its articulate characteristics are clearly seen. The question which concerns us is whether the point where the tongue (hyoid) bone is located (the angle between the lower jaw and the neck) is altered by the raising and projecting forward of the lower jaw (Merkel). This alteration makes a characteristic not to be undervalued, more especially when, with the mouth covered, one compares from the side the difference in the movements peculiar to SCH and U. But these movements can hardly, even remotely, be considered as much a part of the characteristic features of SCH as is the peculiar change effected in

the *atrium*. These changes, or, better, positions, furthermore, deviate but slightly from the quiescent position; the lips, on the other hand, are opened and curled outwards, thus being drawn away from the incisors and their alveoli. At the same time "the two corners of the mouth are elevated somewhat, and the whole mouth aperture generally assumes a slightly higher position than is the case in a state of quiescence;" furthermore, this lifting and curling of the lips cause the corners of the mouth to approach each other. In this manner the outer border of the red part of the lips assumes an approximately square or right-angled form, having blunted corners; the inner border, at the same time, forms a triangular orifice, whose apex lies in the middle of the red portion of the lower lip.

While we can observe all this with the greatest ease from the front, there are also presented from the side, in the change of form assumed by the *atrium*, distinctive features which we instantly recognize. Although we may have become familiar with divers vowels in uttering which the *atrium* is projected forward, yet in all of these the shape assumed by the *atrium* approximates that of a section of a cone, while in SCH the shape is more that of a hollow cylinder. And furthermore, upon closer observation, we recognize that the lower jaw, as has already been said, is projected forward, and that the angle between the lower jaw and the front surface of the throat is more obtuse. This, taken in connection with the peculiar forward stretching of the cheek surface (a difficult thing to describe, but readily recognized), presents ample characteristics for the recognition of SCH, even when the mouth is covered, and for its distinction from the vowels above mentioned.

L.

Entirely isolated from all other sounds of speech stands the sound of L. It belongs properly neither to the stopped

nor to the fricative sounds, nor to any other class of speech tones. Should it be thought that its external characteristics would therefore be the more readily apparent, a glance into the physiology of speech would suffice to prove this idea apparently erroneous. But it is only apparently so. The external characteristics of no sound have been so surprisingly neglected as those of L. Not only in front, but from the side, and even with covered mouth, it can be read with certainty.

In front we observe that the teeth stand apart somewhat more than in the quiescent position of the lower jaw. We furthermore see that since this deviation from the quiescent position is really considerable, the tongue, cone-like, (partaking of the parrot tongue-form) is pressed against the back of the upper row of teeth. Owing to its very hard consistence in L, the tongue thus depresses with its root the bottom of the mouth, and we see a bulging out of that portion of the arch of the chin which is formed by the soft parts between the two lower jaw-bones.

At the same time, we observe that, both in consequence of the depression of the lower jaw and the projection of the sides of the mouth, the cheeks appear flattened.

In the side view, we recognize L chiefly by the vaulted or arched bottom of the mouth, the simultaneous backward pressure of the lower jaw, and the increased obtuseness of the above indicated angle. All of these manifestations are also discernible when the mouth is covered.

The Nasal Tones.

The nasal tones are distinguished from all others by the fact that their emission occurs through the nose instead of the mouth. In general, their articulating place (*locus articulationis*) is identical with that of the stopped sounds; nevertheless there are some additional peculiarities to be observed.

M has the same articulating place as that of the P genus; it differs, however, from the latter in this, that the lips, or rather their red surfaces, are incurved. M therefore, in front, is distinguishable from P by the fact that it displays a narrower lip-border; and, from the side, by the distinctly observable narrowing of the space between the lips and teeth.

N, in its external manifestation, takes an intermediate position between L and T, when the sound is viewed from the front. The rows of teeth assume about a medium distance from each other; therefore, when viewed from the side, the lower jaw also assumes an intermediate position. On the whole, the position approaches nearer that of T, only that the two rows of teeth, as seen in front, appear farther apart; that the lower jaw, seen from the side, lies lower downward; and furthermore, that, when the transition to the vowel is made, an entirely different kind of a movement is to be noted.

NG, finally, in its position is externally hardly recognizable, principally owing to a lack of all external characteristics, despite the opening of the mouth, which corresponds nearly to the quiescent position of A, D, and H. The formation of the NG sound makes this self-evident, as it is effected solely by the relaxing of the soft palate.

Some Important Groups of Sounds.

In reviewing the order of the sounds thus far named, we constantly find three main places of articulation. The first involves the lips; the second the teeth, the third the palate.

The group F, M, P, B (Labials).

While in F, viewed from the front, the *atrium*, especially its lower portion, is considerably shortened, the sound of M shows an evenly compressed lip-border. The width of

the red portion of the lips is only slightly narrower at the corners of the mouth than at the middle. On the whole, the red portion of the lips appears considerably narrower. In P it is also narrowed; but midway of the mouth its breadth considerably exceeds that at the corners of the mouth, although the real place of pressure certainly lies more towards the middle. In B, finally, the red portion of the lips appears to its full extent.

Viewed from the side, we observe in F, on the part of the lower jaw, a considerable movement to the rear, while in M it plainly moves decidedly forward. But even here the borders of the lips are curled inward. This disappears in P; nevertheless, the lips continue to be forcibly pressed against the teeth. In B, finally, the lips move sufficiently forward to assume their natural quiescent position.

The Group L, N, T, D, S (Dentals).

This group, in a front view, shows us the distinctive features of the tongue constantly lowering itself, and the rows of teeth gradually approaching each other in such a manner that in L the aperture between the teeth is greatest; in S it is least, and the tongue is lowest. A side view shows this change most effectually by the altered position of the lower jaw. While in L it is depressed, it gradually elevates and projects itself, until in S the crowns of the teeth stand directly opposite to one another.

The Group CH, J (English Y), G, K (Palatals).

This group does not display so regularly graded a succession of external manifestations; and it can be arranged in this order only when the position of the lower jaw is observed from the side. In CH its position is highest; in K lowest.

If, however, we take a front view of the group, we shall

soon find that they must be arranged as follows: J, CH, G, K; for in J the corners of the mouth are farthest apart; in K, on the other hand, the aperture widens, and the corners of the mouth are closest to each other.

R.

It is with great difficulty that we can read this sound. It is recognized most readily at the close of a syllable. In this case it is generally pronounced like the vowel A. The syllable *er* sounds *ea;* the syllable *der, dea; mir, mia,* etc. When a word commences with R, no definite feature of recognition can be given. On the whole, only the following is to be noted and especially practised. If R is uttered as a tongue R, it may be confounded with D, T, N, and especially with L. If, however, R is uttered as a palatal R, it will, of course, easily be confounded with the sounds of the third articulation division, particularly with G and J. These hints must suffice to impress the fact that R must be practised in contrast with the consonants above named.

This closes the description of the external characteristics of individual speech sounds. It remains as a matter of supplemental proof to add some remarks.

Should it be thought desirable to test further what has been said, it would assuredly be an error to commence doing so with one's self. Due objectivity in judging of external characteristics of speech sounds, by the observation of one's own person, is rarely preserved; of this I have satisfied myself innumerable times.

An excellent means of determining and fixing the objective characteristics of individual sounds is given us by instantaneous photography. It was utilized in 1885 for this purpose, and its importance and the results attained were explicitly stated in an article by Félix Hément,

entitled: "Les progrès récents dans l'enseignement des Sourd-muets," in the periodical *La Nature* for 1885, p. 168. I have myself given this subject special attention during the past year or more, and in time we shall certainly achieve interesting results in this line. With ordinary instantaneous photography, however, it is extremely difficult to photograph a sound singly apart from its sound combination in word or sentence; it requires much practise and great skill to close the shutter at the right moment. A more convenient way would be to use the "series" apparatus, which enables one to take a series of instantaneous photographs. Such apparatus, however, is very expensive and beyond the means of single individuals. The apparatus would have to be of such a character that at least twenty negatives could be taken within a second. Notwithstanding this, I considered the subject of such importance that I, myself, consumed a considerable portion of my time in endeavoring to solve it. Meanwhile an article was making the rounds of the press, inspired by an article in the *Figaro*. I extract the following from the *Photographhische Mittheilungen* of March 1, 1892, p. 362:

In the *Figaro* of February 2, 1892, under the heading "*Au jour le jour*," there is a noteworthy article, by Guy Tomel, which prompts me to offer the following observations:

The fact that every motion consists of a series of movements, or phenomena, which succeed one another so rapidly that, to our vision, they appear as a single motion, may be assumed as already known. Our eye is only capable of fixing, as it were, the pictures of passing objects, whether singly or collectively, when at a visible distance they are directly in front.

Instantaneous photography, at present, has arrived at such a high state of perfection that skilfully constructed apparatus enables us to fix, in the fraction of a second, the individual phases of an apparently single movement. The resulting prints are then pasted successively equi-distant upon a strip of paper, the ends of which are so joined as to form a continuous circle. This picture-circle is then placed in a rapid-vision apparatus, the upper part of which is likewise circular (but wider than the picture cylinder, and provided with slits), and placed on a revolving

disc. When revolving, one observes, through one of the slits, the exact succession of the apparent motions of the photographed object.

According to the writer in the *Figaro*, Messrs. Demeny and Marey, of the *Collège de France*, have availed themselves of this process to photograph the lip movements of a person speaking; and, as just indicated, have united these pictures in a rapid-vision instrument such as above described, for the purpose of enabling deaf-mutes, by imitating the apparent lip movements thus presented to their view, to communicate with any and all persons, without resorting to the cumbersome language of signs, foreign to the majority of people—certainly one of the greatest of services that photographic art could render to suffering mankind! Our unfortunate fellow-men are thus enabled, virtually, to practise every movement, and by means of intelligent direction to attain the highest grade of distinct enunciation; and it is self-evident that thus an immense amount of time and pains will be saved, as even the most patient and devoted of teachers would find it impossible constantly (even voicelessly) to undergo such exacting speech exercises with their pupils, to say nothing of precision.

To Messrs. Demeny and Marey is due the credit of having given the first impetus in this direction towards the amelioration of human suffering. It would be a great satisfaction, however, to the writer of this, should these observations of his contribute to animating the proper parties to institute diligent tests as to whether or not these achievements of instantaneous photography can be rendered serviceable to the pupils of deaf-mute institutions.

Every instructor of the deaf will at once realize that the demands here made upon the achievements of instantaneous photography are excessive. Let us assume that in moderately rapid speech twelve sounds are uttered in a second;* this would hardly enable any one to speak and consequently photograph more than two words per second. In doing so, however, it is absolutely necessary that the instantaneous process seize the most characteristic positions of the sounds. It is well known that instantaneous pictures can be taken with a flash-light in

*This assumption is rather low. I have made numerous counts upon myself and others and found that when speaking moderately fast 1,200 to 1,500 sounds per minute are produced, which would be 20 to 25 sounds per second. It is, however, only with the best of series apparatus that 20 to 25 pictures can be taken per second, which would be necessary if we desired to divide ordinary speech into its elementary sounds.

$\frac{1}{1000}$th of a second. For speech-action flashes of $\frac{1}{500}$th to $\frac{1}{300}$th of a second would suffice. Let us now assume that we wish to photograph the word "übermorgen." The word represents ten characteristic positions of the organs. Let us assume that the stop is correctly lifted at the beginning of the ü; we will then, considering the comparative duration of the utterance of ü (provided the regular release of the stop is made), secure possibly two pictures, whereas, in view of the rapid transient process in utterance, it may occur that just at the cut off, or stop movement, no picture is obtained. I will, however, assume that a flash-light negative was obtained at the very moment when the most characteristic feature of the sound presented itself. We nevertheless shall not obtain the valuable transitions from sound to sound. As I have already mentioned, we would need to have an apparatus which would give us at least twenty pictures in a second. Such an apparatus, however, to accomplish its purpose, would be extremely expensive.

Assuming, however, that we had such an instrument and could take twenty pictures of a word having ten distinct sounds, it would, after all, be only one word! Would it then be really anything of an exercise for a deaf-mute to continually whirl around a single word in a so-called Stroboscope? Would he thus learn to read speech? Certainly not. He would have to take a series of word-pictures for every word—a kind of Stroboscopic Dictionary; only then could it be said that the desired achievements of the apparatus were attained. In my opinion, instantaneous or flash-like pictures of single sounds would far better attain the object; and I have utilized such instantaneous pictures for the purpose indicated.

If then we would really utilize the Stroboscope or Zoëtrope for this purpose, a large number of pictures of individual sounds might be procured and kept on hand to enable one to construct certain sound-pictures for given

purposes; for instance, if it were desirable to present the word "Schokolade," the pictures might be thus arranged:

(Sch) (o) (o) (k) (o) (o) (l) (a) (a) (d) (e).

For the three vowels, we should need to insert two of the same vowel pictures, as the vowels consume greater time in utterance than the consonants.

Some experiments I have been diligently making in this direction for more than a year are not yet concluded. Possibly I may present at a future time some of the sound-pictures I have secured by instantaneous photography.*

If we would, with the naked eye, observe in minutest detail the external characteristics of speech-sounds, there is in my opinion but one way; and that is, while listening, carefully to observe persons who are speaking to us unconstrainedly and who do not know that we are observing them. We must, however, in observing the external characteristics of any particular sound, concentrate our attention, at the time, solely upon that individual one. In listening, it will very often occur that, shortly previous to its advent, we shall know what sound is to be uttered, and can therefore quickly concentrate attention upon it. Of course, the observing of any one person and one single observation will not suffice to fix in our mind the external characteristic of a sound. We need frequently to identify the sound as seen in one person, and then to verify it by observations upon other persons. In doing this, an accurate knowledge of speech-physiology is necessary. In this manner, the above data were obtained three years ago, and their correctness has since been verified. The really striking success which has thus often attended my father's efforts and my own has convinced me of their

* Dr. Gutzman's Stroboscope, known also as the Zoëtrope, consists of an apparatus constructed upon the principle of the Kinetoscope, in which the movements of the mouth when uttering any letter or combination of letters are shown by Kinetographic pictures.

correctness. Incidentally let me cite in evidence the fact that a gentleman who became deaf after the twelfth year of his age attained such skill as to enable him, while in the parquet of a theatre, to follow, word by word, the conversation of two ladies in an adjacent box. And a young lady, who had almost entirely lost her hearing power, by this process attained so great a proficiency in speech-reading that the examining aurist (Professor Dr. Trautmann) could not at first be made to believe that the lady had absolutely not heard a word of all he had spoken to her. I am also glad to be able to have had an opportunity to demonstrate, at the first medical clinic of Privy Counsellor Professor Dr. Leyden, in the Auditorium at Berlin, the possibility of a deaf-mute's thus faultlessly reading sounds and words solely from the general facial indications, even when the mouth was covered.

DR. HERM. GUTZMANN.

Berlin, Germa[illegible].

[TO BE CONTINUED.]

DR. BLAKE'S LECTURES.

MUCH has been done for the deaf, but much more remains to be done, and, in order to promote their welfare during their school life and afterwards, a new movement was set on foot in Boston in August, 1894, when, at the suggestion of the Principal of the Horace Mann School, a number of parents of deaf children met together for the purpose of forming an association in the interests of deaf children, especially those attending that school.

Some of the objects of the Boston Parents' Education Association for Deaf Children are to encourage home instruction; to aid schools for the deaf in the city of Boston; to help deaf children continue their education in schools

and colleges for hearing persons; to aid them in acquiring a practical knowledge of useful trades and business; to assist them in obtaining remunerative employment; to bring them into more extensive social relations with hearing persons, and to employ such other means for their advancement as may be deemed advisable.

Under the auspices of this Association, Dr. Clarence J. Blake, Professor of Otology in the Harvard Medical School, is giving a series of lectures upon "The Causes of Deaf-Mutism, and the Education of the Deaf." Four lectures have already been given, and the course will be resumed in the autumn. The lectures are given in the hall of the Horace Mann School, and the audience is composed of parents, teachers, and friends of the children, as well as many of the past pupils themselves, all of whom listen with eager attention to the simple, lucid, yet careful and scientific explanations, which are given in a most charming way. Indeed, so pleasant and genial is the speaker and so fascinatingly does he present his subject that one teacher remarked at the close of a lecture, "I could listen an hour longer."

Dr. Blake first gave a detailed description of the ear—external, middle, and internal. His remarks were illustrated by models and charts which were passed about, and by sketches in colored crayons upon the black-board. In considering the visible part of the ear, the portal, so to speak, we were led to see that it was a thin flexible piece of cartilage, projecting from the side of the head, and supplied with a few weak muscles. He compared the movements of the human ear with those of the horse and the mosquito. He showed us that movements are in direct proportion to the immobility of the head, those animals most able to move the head being least able to move the ears, and *vice versa*. The trumpet shape and uneven surface of the ear are aids in its work of collecting sounds and giving them an inward direction. The auditory canal

or the tube part of the trumpet, extending inward and downward, is supplied with wax bitter and obnoxious to insects, and with hairs to impede their ingress. The hairs have also another function, that of diminishing the resonant capacity of the canal.

The middle ear, a small cavity or chamber of irregular shape, is separated from the external ear by a circular membrane called the drum-head. This membranous drum-head is tense and inelastic and so thin as to be almost transparent. The varying degrees of thickness were pointed out; also its form, concave as to its whole surface, but convex from the middle to the periphery. The tiny bones of the middle ear—the hammer, the anvil, and the stirrup—were graphically described, but no description or drawing could give so true an idea of their size and position as the daintily mounted specimen under a wee bell glass which we were all permitted to examine. By this means an idea of the chain of bones stretching across the middle ear from the membrana tympani, or the outer drum-head, to the membrane on the opposite side, and their action in transmitting vibration, were clearly set forth. If this middle ear is a drum with membranous heads, it must have a free movement of air within it, in order to maintain an equal pressure upon both sides. A narrow canal, called the Eustachian tube, leading into the throat, furnishes the required opening, and in the act of swallowing or gaping the air of the middle ear is renewed. The Eustachian tube serves also, like most of the parts of the ear, a double purpose, being a drain for the fluid which is secreted by the mucous membrane lining of the middle ear.

The internal ear is the most precious, and the part in which disease, if it enters, works the greatest havoc; but it is situated so far inside and in such a dense bone that it is well protected. Here we find the nerve of hearing spread out over a membrane which floats in a fluid.

Here, too, are the calcareous objects which correspond to the sea sand which a crab must have in its ears in order to hear at the time it is casting its shell, when, being most helpless, it most needs to hear its enemies. In this inner ear are the semi-circular canals which serve as the peripheral organ of equilibration, since their position and formation are such that they act like a carpenter's spirit-level, in three planes. Without them it is difficult to walk properly or balance well. Persons who have lost them cannot be made dizzy, no matter how rapidly they are twirled, for no record of the changes of position is made upon the brain.

The sound-transmitting apparatus in the ear having been described and its work briefly outlined, the sound-perceiving apparatus was touched upon. We were told that the hearing sense was the last part of the brain to go to sleep and the first to wake up. Some striking illustrations of this fact were given, one being that of a sailor who fell from a mast to the deck and was taken up for dead. His first consciousness, coming before that of the pain from his terrible bruises, was that of hearing some one say, "What shall we do with the body?"

Does it seem possible that the ear can be so trained that places may be known as they are passed in the night, not by sound, but by the effect of the air upon the ear? The story is told of an engineer who had long been running over a certain road. He was once absent for a few days. When he returned to his duties, as the train was rushing along in the darkness, he shouted to his fireman, "Where's Joe Smith's barn?" "It was burned night before last," was the reply. His quick ear, used to a certain effect at that spot, had noticed the difference.

It seemed wonderful to many of us that hearing was possible when the drum-heads were quite gone, but it was shown that vibrations could act directly upon the stirrup bone.

When Dr. Blake came to talk upon the diseases of childhood which impair the hearing, he caused many to feel surprised that measles, always supposed to be a simple and harmless disease, was the greatest cause of deafness, while scarlet fever came next. Out of a given number, eleven cases of measles would seriously affect the hearing, while there would be but three of scarlet fever. Whooping cough, mumps, and cerebro-spinal meningitis were shown to be causes of deafness, and the manner in which each disease affects the ear was described in detail. Chalky deposits, preventing the action of the bones of the ear; adhesions, the result of past inflammations of the mucous membranes; thickening of the drum-heads; accumulations of wax in the external ear; all these causes of impairment of hearing were briefly outlined.

A child's earache, resulting from an inflamed and thickened condition of the mucous membrane, is nearly always worse at night, because then the child, being at rest,—neither eating, laughing, talking, nor crying,—is not renewing the air in the middle ear. The pain is often relieved by supplying the ear with air; if no other means is at hand, a common clay pipe, if clean, may be made to answer the purpose by putting the stem in the child's nose and forcibly blowing through the bowl.

Nature has been most bountiful to us. We have double the amount of hearing that is necessary, more than double the tactile sense we have occasion to use, and this is equally true of sight. More than double the amount of nervous force needed is stored up ready for use. When one channel is blocked the nervous force will have to find its exit through the others. It does not indicate a lack of nervous force when one channel is blocked; this point was strongly illustrated by the peripheral effect of the emotion of fear. Suppose we were in a deep Devonshire lane, banks twenty feet high on either side, steep and slippery with moss, with openings at long intervals,

when suddenly we should see a bull of terrific aspect coming; immediately our hearts begin to beat and knees to shake, but not until we turn and run do we find relief. The nervous force liberated by the feeling of fear finds its readiest expression through the involuntary muscles, since they are the channels constantly open, but the voluntary muscles have, so to speak, a stop-cock,—the will, which must be turned on before they can furnish an outlet for the nervous force liberated by the feeling of fear. Hence our hearts beat and our knees shake first because they are not under the influence of our wills; but when we will to turn and run, the nervous force is switched off and expended in a new direction and our heart-beats become more normal.

Since there is this abundant supply of nervous energy, it may be that there is more than can be given off through ordinary channels when the ears are closed. This may account for the irritability the deaf show before they have received the training of the eye and the tactile sense which enables children to pour out surplus energy in useful ways.

We hear in other ways than through the ear, and in some cases of deafness advantage is taken of these possibilities to provide aids to hearing. A pine-wood pencil held between the teeth furnishes one means, since it is sometimes possible to hear a sound transmitted through the teeth. Another means of hearing through the teeth is to hold a Japanese fan against them, having the edge of the fan protected by a thin silver rim to keep the saliva from moistening the paper. One can hear by bone conduction in other ways; one well-known lady was able to hear conversation provided the speaker put his mouth upon the bone just above the eye.

In case an instrument is used, it is not well to have one fixed to the head, for continued exposure to loud sounds fatigues the sense of hearing. There are so-called in-

visible artificial aids to hearing widely advertised under different names. They are useful in cases of perforated drum-heads and have long been known to the profession. Unfortunately the charlatans who advertise them arouse hopes doomed to disappointment by their false claims of curing any and all cases of deafness by a means which is only useful in a few. Their object being to get all the money they can, they mix up a few genuine testimonials with many untrue ones, charge great prices for a simple mechanical device which is worth but a few cents, invest their operations with impressive surroundings, and in other ways seek to impose upon the credulity of parents who have the welfare of their sorely afflicted children at heart. It has been discovered that a "trust" which furnishes printed addresses of deaf people to these charlatans exists, and these addresses are obtained through the churches. Ministers are approached by letters requesting them to give information of those known to them who are unable to attend divine service because of their deafness, and are assured that any such persons whom they may mention will be treated at a large reduction.

When we meet again Dr. Blake promises to lead us into a more extended and exhaustive study of the anatomy of the ear, and to give us the latest results of scientific and psychological research as to utilizing as a means of education the modicum of aural sense which so many of the deaf possess.

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THE EDUCATION OF THE DEAF IN THE UNITED STATES. REPORT OF A VISIT, AND A FURTHER CONTRIBUTION TO THE QUESTION OF METHODS.*—II.

C. *Speech, the Sign-Language, Writing, and the Manual Alphabet in their Mutual Relation and their Relation to the Deaf.*

Deaf-mutism is an organic defect, for, lacking the sense of hearing, our deaf-mutes lack that organ of speech which is an essential condition of spontaneous vocal utterance.

Though equipped with the mental capacity for speech and with sound vocal organs, and associating exclusively with hearing persons, the deaf-mute nevertheless remains dumb, totally dumb, for so far there has not been a single authentic case of a person really born deaf and remaining deaf who has evolved even a few words from his own unaided resources. This fact should be given all the more prominence, since, not so long ago, an attempt was made in all seriousness to subvert this universal truth. For, in their zeal to defend an unsubstantially founded method, some persons have gone so far as to declare the voicelessness of the deaf to be nothing more than a crotchet, and to attempt to prove that deafness is no sufficient reason for dumbness.

1. *Speech* is an audible language addressed to the ear. Eminent philologists define speech as a collection of sounds. According to them man is a singing creature that combines thought with sound-notes. As music is the language of emotion, sonorous speech is the language

* Translated from the German by GEORGE W. VEDITZ, M. A., Instructor in the Colorado School, Colorado Springs, Colo. Continued from the April number of the *Annals*, page 210.

of reason—the mental activity that embodies itself in sound. Man does not speak with the ear, any more than an artist paints with the eye. But as the brain of the artist guides his hand, and the latter is watched and directed by the eye, so the soul of speaking man listens to its own activity, and so it controls and directs the play of the musical speech-apparatus through the sense of hearing.

Language is not only a means of communication with others, but it is in the first place, and above all, self-consciousness, communion of the speaker with himself, —it is the contemplation of the objective soul by the subjective soul. In his able treatise, "Love for the Mother Tongue," Steinthal says, pertinently: "The soul, which gives impetus to the organs, will not be satisfied until it receives assurance through the ear that its impetus has met with the proper response. Whatever and however much the soul imparts to the organ, it insists upon receiving again in altered form through the ear." Wilhelm von Humboldt assumes a similar standpoint in regard to the connection between language and the ear, in his well-known treatise "Concerning the Variety of Human Speech-Construction," in which we find the following: "The inseparable union of thought, of the vocal organs, and of the hearing with language is unalterably based upon the original organization of human nature, and is no further explicable."

This ingenious vocal language-mechanism with which nature has gifted normal man is destroyed in our deaf-mutes by the absence of hearing. Speech is an audible language addressed to the ear; the deaf-mute is without hearing, and for him there exists no audible language; therefore, a means of expression identical with the conception "speech" does not exist for him. The deaf-mute cannot embody his inner emotions in articulate sounds, cannot translate them into sounds, nor contemplate them

in sounds, and, therefore, this function, which in hearing man is filled by the ear, is performed by the eye. The deaf-mute is a creature of the eye; it is with the eye that he takes into himself the outer world, and after the raw material purveyed by his four senses has been mentally worked into shape he does not express his conceptions audibly, but visibly. The soul of the deaf-mute, fettered to a defectively constructed body, contemplates its products through that sense which it finds most convenient, it peers through that crack which lies nearest, and in the person of the deaf-mute this is the noblest of all the senses—the eye. But as the eye can find no service in sound, the deaf-mute takes his thoughts, conceptions, and ideas in hand, conducts them to the eye, and thus gives the longing soul assurance in visible signs that "its impetus has met with the proper response."

For the deaf-mute there exists only a visible form of language. In this declaration De l'Épée expressed a truth, upon which, so far, all the tricks of sophistry have been miserably shattered. The deaf-mute is predestined to the language of signs, and he seizes upon visible gestures under the same natural necessity as that under which the normal man speaks and expresses himself in audible sounds.

Though this truth is incontrovertible, we should not conclude that under such circumstances every attempt to teach the deaf to speak is foolish. By the establishment of this fact, we have in the first place simply won a basis for determining the linguistic nature of the deaf-mute in general. If, now, experience shows that a not inconsiderable number of deaf-mutes have been taught speech with gratifying results, the circumstance alters nothing concerning this truth, and has, in itself considered, nothing to do with the conflict of methods.

In its present stage the conflict of methods no longer turns on the question whether the deaf-mute should or

should not learn speech. This question has been conclusively decided, nor have I ever answered it negatively. But the point at issue is *whether this artificial language is qualified to serve as the foundation of the entire instruction of all classes of the deaf.*

The fact is undeniable that many deaf-mutes have mastered the art of speech in such a degree that they can make themselves understood by everybody, and it is my conviction that it is possible to teach nearly all deaf-mutes at least enough of this art to enable them to carry on the most necessitous oral intercourse with those persons with whom they are in daily intercourse. For in course of time persons closely connected with these deaf-mutes become accustomed even to the hardest and most obscure pronunciation, and therefore this means of communication, however defective, is of incalculable value to the deaf in practical life. Therefore the deaf should learn to speak; their dumbness should be removed. But the application of this therapeutic pedagogy is far from completing our work of salvation, for the usefulness of a deaf-mute in practical life does not depend exclusively upon his skill in speech; his mental, moral, and religious education is of yet greater importance. For upon this last will depend whether he shall be found faithful and reliable in whatever post he may be called upon to fill in this life.

The representatives of the Pure Oral method emphasize in a one-sided manner the importance of speech, without understanding or appreciating all the other tasks which a school for the deaf must perform and which are identical with the purpose and end of the public school. By making articulate language the basis of all instruction and externally imitating the process of instruction observed with normal children, the Pure Oral method has degraded German schools for the deaf to a caricature of the public schools, a caricature that has hardly anything in common with the characteristics of the original.

Like writing, the articulation of the deaf is in the first place a mechanical dexterity that has very little or nothing at all to do with intelligence. As skilful instruction may make an expert penman out of a dolt who could not unaided write correctly any of his thoughts, so it is also possible by the application of the proper process to bring most deaf-mutes to a certain degree of intelligible articulation. But it often happens that this laborious task requires years, and that deaf-mutes who were originally endowed with normal capacities lose all their mental activity under this continuous mechanical occupation, and are gradually converted into respectable blockheads.

It is impossible to imagine a process of instruction more tedious, uninteresting, or spiritless to the pupil than the articulation instruction of the deaf; and, to be exact, we cannot speak at all of instruction during the development of sounds and the first lessons in articulation, for the business of removing or curing dumbness has more similarity with drill than with instruction. The articulation teacher sits before his pupil, like a piano-tuner before an instrument out of tune, but with this difference: that he cannot, like the latter, apply his key and mechanically produce the proper tone as desired by the ear. The little deaf-mute is to produce audible sounds which he is unable to criticise for himself, because, lacking hearing, he lacks the only *reliable* gauge for everything audible. He is required to imitate sounds of which the teacher, even though he speaks with the tongue of angels, can give him no approximate model. The skill of the teacher consists almost entirely in indefatigably speaking before the child and patiently waiting till the latter succeeds in imitating the desired sound. The little deaf-mute is thus the object of an experiment in the hands of the teacher. The whole process of removing dumbness is based upon crude empiricism. In any case it is a haphazard experiment in which one never knows what results will be attained. No

teacher of articulation can say at the beginning of a new school-year how his pupils will speak, for success depends more upon chance than upon his "science" and good intentions. Nor does the mental capacity of the pupils determine the success of the teacher's efforts. It is not at all infrequent that the pronunciation of intelligent pupils remains rough and indistinct, while on the contrary dull pupils learn to speak clearly and intelligibly. We have as yet no rule according to which we can achieve with our pupils even a single vowel sound with the desired distinctness, and this circumstance explains how it happens that the pupils of the same school and the same class articulate with so much difference.*

With the congenitally deaf, speech, in ninety-five cases out of a hundred, consists of a succession of mistakes in articulation. If we adhere to the principle that each mistake must be immediately remedied, the work in school consists—as is actually the fact—principally in the correction of faults in articulation. The daily work of instruction according to the Pure Oral method, therefore, has the greatest similitude with the conduct of a workman whose tools are in poor condition, and who, instead of working, wastes the greater part of the day in tinkering with his tools.

If the adherents of the Pure Oral method refuse to allow any other means of communication besides speech; if they wish to make speech, which to the deaf is so extremely artificial and so incompletely mastered, the foundation of the entire system of instruction, and insist upon influencing the deaf-mute mind only audibly and by word of mouth, then they must necessarily neglect the mental development of their pupils, and our schools for the deaf must, more and more, forfeit the character of educational

* Even at the school for the deaf at Frankfort-on-the-Main I failed to understand some of the pupils of the upper classes while reading, and the same was the case in the American oral schools.

institutions. How can we educate the deaf-mute by means of a language for which nature has denied him the capacity, and whose acquisition will require many years? To instruct the deaf-mute solely by means of speech, excluding all other means that lead to the desired end much more easily and quickly, is equivalent to making a food of a medicine; it is placing a bowl of soup before a hungry man with the remark that he must leave it untouched until he has whittled out a spoon for it.

The art of speaking is a blessing for the deaf, but the use of speech as the exclusive means of instruction and communication changes the blessing to a curse. In our case the popular proverb, *corruptio optimi pessima*, is only too true. The nobler an object, the worse it can be misused.

"With the introduction of the Pure Oral method, German schools for the deaf were placed in a state of mental siege," said a prominent German teacher, with whom, not long ago, I had an opportunity to discuss the present state of things. But our case is like most cases where irrational and unjust means of coercion produce results just the contrary of those desired. Not only are the adult deaf in revolt against the violent usurpation of their natural rights, but even the smallest pupils of our schools find ways and means to save themselves from the mental starvation process to which they have been condemned for years. If the German "State examiners," like those in the State of New York, should characterize and classify our schools according to that means of communication which the pupils use in their unrestricted intercourse among themselves, such a general muster would lead to astonishing results.

With full cups we preach total abstinence. "*Speech*" has been for twenty years the password of German teachers of the deaf, and yet in no country in the world do the deaf use signs more than in the land of the Pure Oral

method. While we insist that our deaf-mutes should speak and think in speech, their entire miserable little store of ideas lies bound in the fetters of the sign-language. In the school-room they are German; at leisure they are French. Under the eye of the teacher there is mouth-to-mouth communication; behind his back the means of intercourse is as if the French method were employed exclusively in all its purity. The glorifiers of the "living word" attempt to vanquish their hereditary foe, the sign-language, with tireless articulation and lingual gymnastics; and as it is unable to satisfy the language necessities of its pupils, the Pure Oral method, following a natural necessity, leads to the sign-language.

The German school has long suffered from this dualism, nor has it ever been hidden from discerning men. When the first attempts at juggling with the German method were made, at the beginning of the seventies, Privy-councilor Saegert, then Inspector-General of the education of the deaf in Germany, a thoroughly competent and experienced man, wrote as follows:

> If we demand that instruction should be given in schools for the deaf, with the entire exclusion of signs, and assert that the pupils really learn to think only in words, it is at least a self-deception of the teachers or an unnatural demand upon the school. With individual instruction at home this may be possible—of this I have plenty of instances—but in the schools for the deaf that I have seen and inspected for twenty-two years the sign-language exists universally among the children.

Nothing has been altered in these conditions by rechristening the "German method" as the "Pure Oral method." The German method is still the same monstrosity that it was twenty and more years ago. With the introduction of the Pure Oral method, German education has adopted the gait of the crab; that is, it has not gone backward, but has gone forward wrong side first. The representatives of the new departure attempt to eradicate the sign-language, root and branch, without being able to offer the deaf anything in compensation. For the experience of a hundred years has taught us:

1st. That the Oral method has proved inadequate as a rational process of instruction, and that it offers no basis of sufficient capacity for the construction of a method of education for the deaf.

2nd. That it is incapable of satisfying the language-craving of the deaf, and therefore leads to the language of signs.

2. *The language of signs* is a medium of intercourse consisting of visible signs and therefore addressed to the eye.

As the language of an uneducated man differs in extent and finish essentially from that of the educated and learned, so we can distinguish different grades and stages of development in the sign-language. Teachers of the deaf, as a rule, classify signs as natural or artificial. Though this designation is not altogether exact, and it is difficult to draw a dividing line between the two, we will nevertheless adhere to this primitive classification, because in this place it will answer our purpose.

Natural signs are familiar to the layman under the name of pantomime. Hearing people make extensive use of them in common intercourse, and in public places of amusement and recreation they are even employed according to rules of art. The language of natural gestures is the property of all men. It is cosmopolitan, and therefore pantomimic performances are understood by every one, no matter what his nationality.

Natural signs, or pantomime, are not a language in the correct sense of the word, but are a plastic representation of things and conditions, even of thought, feeling, and endeavor. As men, in their innermost being, are organized alike, live in the same world, and are moved alike by things and events, in the plastic representations of pantomime they meet old acquaintances which are understood and comprehended like "pictures without words."

That natural signs do not come under the current conception of the word "language" is evident from the simple fact that a pantomimic representation cannot be stenographed, like the address of an orator, for instance. Pantomime may be *described* but not *transcribed.* It presents conditions and events to the spectator, but no thoughts in the form of speech. The natural sign-language does not consist of definite, fixed conventional signs, but of natural gestures that do not possess the value and significance of language symbols. They must be counted as means of description, and regarded as reflections or expressions of the impression produced on the mind.

Nature proceeds wisely and never without purpose. If Providence placed in the cradle of mankind the gift of a universal means of communication, in the shape of pantomime, then this motherly gift is of greater importance than the spoiled favorite of nature is inclined to believe in his thoughtlessness and ingratitude.

Though universally intelligible, pantomime cannot pass as a language in the strict sense of the word; it nevertheless forms a step toward language, and yields the soil from which embryonic speech obtains its first sustenance. Not a single human being has as yet learned to speak intelligently without pantomime. Even before a child can speak it expresses its desires and necessities by gestures. That a child does not long confuse "papa" and "mama," that it connects the proper conceptions with the words and uses them intelligently, must be ascribed in the first place to instructive pantomime. The child would repeat parrot-like, and for years remain in the dark as to the meaning of such words as "good" and "bad," "pretty" and "ugly," "long" and "wide," "sweet" and "sour," "soft" and "hard," "large" and "small," "laugh" and "cry," "sing" and "spring,", if gestures with their far-reaching hints were banished from the nursery.

Though pantomime is not a language, *it possesses the*

virtue of being able to explain the meaning of words. And if this universal medium of intelligence is of the greatest importance to normal man, it is simply indispensable to the little deaf-mute whom we are to conduct by the shortest path to a comprehension of langu..ge. *Every teacher of the deaf should therefore be a master of pantomime, and should make the most unrestricted use of the language of natural signs which fits into every method.*

The deaf-mute, however, does not stop at the pantomime here described. Under the necessity of the same laws by which the ideas and conceptions of hearing persons express themselve in audible words, the mental products of the deaf-mute express themselves in visible signs and gestures which in most cases have nothing more in common with the object designated than has the spoken or written word with the meaning it conveys.

In his intercourse with his relatives, the little deaf-mute creates a scanty gesture-language which is visibly perfected and increased in extent as soon as, on entering school, he comes into contact with others similarly afflicted and his mental horizon is suddenly widened. This medium of intercourse, therefore, which originated in the most natural manner, and is at least as natural as the artificial language of words, we designate, to distinguish it from pantomime, as the language of artificial signs, in order to indicate that it has ceased to be universally intelligible.

It is evident at the first glance that the deaf-mute simply yields to the necessity imposed by nature, when he creates a language that in its outer garb differs so much from the language of the hearing. Nor does it require any deep speculation to comprehend that if it had pleased Providence to create a deaf humanity, the latter would have created a medium of intercourse in the same direction. A deaf humanity would not speak, but use signs; it would never have created an audible, but a

visible form of speech. We must proceed from this point of view, in order properly to appreciate the relation of the deaf-mute to signs and to speech. From this point of view also we may understand why the deaf-mute clings to the sign-language with every fibre of his being, and why the results of our oral efforts remain, in general, so meagre. Even the most uneducated person can see at a glance how different would be the effect of gestures from that of inaudible lip-motions, should I say to a meeting of deaf-mutes, for instance, "All men must die," or "God loves all men." Whatever objections one may bring against the sign-language, the deaf-mute will never altogether forsake it and find a perfect substitute for it in artificial articulation. This language of signs, created in the first place by uneducated deaf-mutes, may be never so meagre, but it renders the greatest service to the deaf, and for the weakest of our weak ones, who are nowadays cast out of our schools as incapable of education, it may perhaps furnish the only means of education that can save them from complete brutalization.

It is unnecessary in this place to give psy hological reasons why the language of signs is on the whole easier than speech. But that this is the case, and that the latter implies a higher degree of intelligence than the former, is evident from the circumstance that feeble-minded persons who, though possessing intact hearing, have never learned to speak, nevertheless use and understand gestures, so that many pupils of schools for the feeble-minded give the impression of being deaf-mutes.

If, however, feeble-minded persons, who, for want of intelligence, remain dumb, acquire the sign-language without difficulty, this circumstance leads to the inference that such a language must be very scanty. In fact, this is the case. The so-called language of signs, as used in the intercourse of pupils of most schools for the deaf, is in a very inferior stage of development, and consists in a

mere stringing together of symbols for what are mostly concrete conceptions. This beggarly language is sufficient for the intercourse of the uneducated deaf among themselves, but it not only confines them to the sphere of crude perceptions directly connected with the senses, but also renders all efforts to teach verbal language simply futile, and therefore this language is a regular cuckoo egg in the language nest of deaf-mute schools.

If signs and speech were of equal value, and if both stood in the same relation to each other as, for instance, German and French, then both languages might co-exist without much mutual disadvantage. But this is not the case. The sign-language lacks all the formal elements of speech. It has no declensions and no conjugations, and can, therefore, hardly be compared with spoken language. Contrasted with spoken language it is almost formless, and when this very incomplete means of communication becomes the vehicle of thought of the deaf-mute, all efforts to teach him spoken language are as good as useless. The deaf-mute thinks just as he makes signs, and he speaks and writes just as he thinks. An example will show how deaf-mutes with whom signs have become the organ of thought express themselves in spoken language. Recently a very intelligent deaf-mute, educated according to the German method, told me the following, which I wrote down while he was speaking, and herewith give verbatim: "K. in K. at Aix la Chapelle, five years in America work, chromo-lithograph. Mother widow justice in P. Four brothers and an sister with deaf-mute altogether five. Brothers four formerly student in Berlin. A lawyer and a mine superintendent in K. Two brothers America, I don't know what do. One married America. K. went away here, wedding to America. Brother lawyer. Wife is daughter of the lawyer in P. married. And Catholic all, but very good. But brothers don't like. All know finger language. Mother too. All four brothers fast as

myself, because deaf-mutes Berlin talk much. In Breslau also very popular and society help much. What for? [referring to my writing while he was speaking]. Want to learn about me, cunning. Talk short, but think head much. Home dinner. Won't talk more. Fearfully fatiguing. Must perspire."

This deaf-mute is counted among the so-called "prominent" members of his class. There are thousands of deaf-mutes in Germany with whom the Oral method has achieved yet more miserable results, who speak still more unintelligibly, use, whether speaking or writing, a still more horrible jargon, and stand far below this deaf-mute in their intellectual development.

These scanty achievements in spoken language are in the first place to be traced to the circumstance that the deaf-mute does not sufficiently master the language under the present method, and therefore thinks almost exclusively in signs. In regard to this language we may say the following:

(*a*) The sign-language is the most natural means of expression of the deaf, and a valuable means of communication among themselves.

(*b*) Since, however, the sign-language stands in a sort of antagonism to spoken language, and exerts a most harmful influence upon the acquisition of the latter, we should take pains, *during the years at school*, to prevent it from becoming the organ of thought.

But what medium of language can we offer the deaf capable of taking the place of the sign-language without exerting a similar unfavorable influence? Let us examine writing in this connection.

3. *Writing.* From a superficial examination it might seem that the deaf-mute, to whom an observant eye and a pronounced susceptibility for visible signs are natural, should learn written language with ease. But this is not the case. Theory and practice pronounce against this con-

clusion. The little deaf-mute certainly finds no difficulty in making satisfactory calligraphic imitations of letters and words, and he will even connect the proper conception with a dozen or so of written terms, but here his art comes to an end. Writing cannot serve as the basis of language instruction and as a means of conversation for the deaf.

In general, speech precedes writing, and verbal writing implies an oral language. A humanity without speech would have created no writing; a deaf and mute humanity, no verbal writing. Oral writing is embalmed speech, just as musical notes represent tones fixed on paper. But as notes have significance only for the musically educated, just so written speech symbols can be read with understanding only by one who can translate them into articulate sounds or into gestures. As the composer thinks not in notes but in tones, so hearing man thinks not in written symbols but in articulate sounds. Writing must be read, and in the act of reading only is it changed to speech again. Writing, as well as reading, is always, as any one can see from observation upon himself, accompanied by a still, small inner voice; and if this process is performed so silently that it is unperceived by those about us, we have to thank practice alone for the art. Children and uneducated persons can hardly read silently; in many cases their vocal organs are unconsciously called into activity.

Writing is not adapted to be the form of thought.* The human mind thinks in the body, and with the help of the body. The mind depends upon and is bound to the body in perceptive and linguistically formed thought, but not upon or to means that lie outside the body. Only direct movements of expression, such as articulate sounds and gesture signs, can serve as forms of thought.

Reading and writing are an art. Writing is an artificial form of speech that is not taught and acquired un-

* Here I refer only to verbal writing. With ideographic symbols the case is different.

consciously like articulate speech or gesture signs; but with purpose and study. Intelligent writing and reading are based upon a complex psychological process, and the acquisition of the art requires much time and presupposes a degree of intelligence not possessed equally by all persons. Our verbal writing has real value only for persons who can already speak and therefore read, but not for the deaf-mute so long as he is unable to transform the dead symbols into living sounds.

Therefore, though Messrs. Göpfert in Leipzig and Forchhammer in Nyborg have recently recommended in thoughtful treatises* that writing be made the starting point and basis of language instruction for the deaf, I regard this very noteworthy suggestion as impracticable. Such a method of instruction would burden the memory of the little deaf-mute beyond its capacity, and the results would be disproportionate to the time and labor expended. It should also be remembered that writing could not serve satisfactorily as a means of conversation, and that in a method of language instruction based on writing the deaf-mute must also be able to read. But how could the little deaf-mute read written language? Language instruction based on writing would not render gestures superfluous, but would lead the pupil back to them for two reasons:

(*a*) in order to have a convenient means of communication;

(*b*) in order to read (even if but inadequately) the written words.

Therefore the Writing method, just as the Pure Oral method, leads to the use of that means of communication for which we are seeking a substitute, and which we are forced to combat during the school course, if we do not

*See Mr. Göpfert's "The Place of Writing in Language Instruction," *Annals*, xliv, 92–110, and Mr. Forchhammer's "Imitative Language Instruction on the Basis of Writing," Leipzig, 1899.

wish to relinquish our purpose of giving the deaf verbal language.

A few pages back I pointed out the antagonism existing between the language of words and the language of signs. This incompatibility is still more apparent if we examine closely the relation between writing and signs.

Verbal writing corresponds with speech, but not with signs. The written letters of our language coincide in general with its sounds. Speech and written language are alike in the number and combinations of their elements, and therefore these forms of language mutually complete and help each other.

The language of signs cannot be divided, like speech, into sounds. The number of its elements cannot be determined. The sign-language consists of integral perceptive symbols, to which would correspond a perceptive writing consisting of ideographic symbols. Just as in the case of pantomine, a lecture delivered in the language of signs could not be stenographed. The initiated can reproduce communications in signs according to the contents, but not verbatim, for gestures are not words. In the same manner as signs cannot be written, writing cannot be accurately translated or read in signs. The same antagonism that exists between signs and speech exists also between writing and signs, and therefore, to be brief, we may say that *the sign-language does not correspond with the framework of speech.*

A system of instructing the deaf can be built neither upon writing alone nor upon writing in combination with signs alone. And though the French or American Manual method exhibits very satisfactory results, these results must be ascribed to the aid of another and additional means of communication, which has not as yet received from the profession in Germany the recognition it deserves. I refer to the manual alphabet.

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[TO BE CONTINUED]

THE FIRST ORAL SCHOOL WEST OF THE ALLEGHANIES.

MUCH has been written of the early attempts at speech teaching in America, and due honor has been paid to the instructors, but the history of one of the largest, longest in existence, and most interesting of these pioneer oral schools has been entirely overlooked, and the name of its founder is scarcely known in the profession.

From 1844 to 1854 there existed near Hopkinsville, Kentucky, a school for the education of the deaf by means of the Oral method. It was founded by the Rev. Robert T. Anderson, a Baptist minister, who had immigrated to Kentucky from Virginia, in 1818, while a young man.

Mr. Anderson had received a classical education and was a man of force and influence among his denomination in Kentucky. But the pay of a frontier minister was small and, following a general custom of the day among the educated clergy, he sought to increase a slender income by teaching school. His schools followed his ministerial charges, but after teaching in one or two other places he opened one at Glasgow. Among the children of the neighborhood was a deaf boy in whom Mr. Anderson became interested. It is probable that he was cognizant of Braidwood's attempts to found an oral school for the deaf in Virginia, since he came from the section in which they were made, and when he emigrated from that State, in 1818, Braidwood's school was then in operation at Manchester. Certain it is that he took this deaf boy into his school and instructed him along lines now designated as the Oral method. The boy was bright, his instructor ingenious and persevering; so the attempt was quite successful. So interested did Mr. Anderson become in the work that he determined to open a school for the instruction of the deaf by the Oral method. With this purpose

in view, in order to gain additional information as to methods, he went back to Virginia to consult with the Rev. Mr. Kirkpatrick, who had been associated with Braidwood in the conduct of his school at Manchester in 1818.* He received much encouragement from Mr. Kirkpatrick, who is said to have declared, after having had Mr. Anderson's method laid before him, that it was as good as anything that he himself had learned from Braidwood. It is to be supposed, however, that if Mr. Anderson did not already possess some knowledge of Braidwood's methods, he received some useful hints from Mr. Kirkpatrick.

In 1844 Mr. Anderson opened his school near Hopkinsville, Kentucky, advertised that he would teach the deaf to speak, and soon had a number of pupils. The school was for both deaf and hearing children, and as it became larger Mr. Anderson was assisted by his son, Mr. Cornelius Anderson. The fame of the school spread to neighboring States, and pupils came from all over the South, and what was then the West. No record of the attendance exists, but it is known that in 1845–'6 there were enrolled one from Alabama, two from Mississippi, one from Indiana, five from Missouri, besides nine from Kentucky. Several other States were represented during the existence of the school. There were two sessions per year—from January 15th to July 15th, and from August 15th to December 15th. All the deaf children in attendance were "pay pupils," and while the charge for tuition was modest ($20 per session) the long journey to a then not easily accessible section and the expense of boarding limited the attendance to a class of children among whom, naturally, a capacity above the average should have existed. The school was, therefore, fortunate in the character of its pupils; some of them, judging from their subsequent careers, must have been phenomenally bright as

*"Histories of American Schools for the Deaf," Washington, 1893, Vol. I, Virginia School, page 4.

children. The great drawback was the short time many of them remained, which precluded, in their cases, anything like a fair test of the method employed.

From the description given of Mr. Anderson's method by some of his old pupils, it seems not to have differed essentially from that used by oral teachers of to-day. He taught sounds first and then words, paid particular attention to the positions of the vocal organs, and had many of the devices for securing tone, pitch, etc., that may be seen in our articulation classes of the present time. He had no acquaintance with other educators of the deaf beyond the one meeting with Mr. Kirkpatrick mentioned above, and seems to have worked out the problem of the education of the deaf largely for himself, for, whatever suggestion he may have received from the theories of others, the practical application devolved upon him. The advocates of educating the deaf child in the same classes with hearing brothers and sisters will be interested to learn that, after a certain stage of advancement had been reached, the deaf pupils had part of their recitations with the hearing ones. On this point a grandson of Mr. Anderson, a son of Mr. Cornelius Anderson, who was assistant in the school, says: "The deaf and hearing pupils recited in the same classes. In geography, grammar, spelling, etc., the deaf recited just as the pupils who could hear did. The deaf beginners were not taught in a class, but by themselves, until they were advanced to a degree that permitted combining into classes."

As for that *bête noire* of the oral teacher of to-day, "signs," they seem to have worried Mr. Anderson but little. He had no special animosity toward them, and while "they were not used in the school-room," according to the testimony of his grandson, he permitted their use out of school, and even made use of them himself occasionally. His position is set forth by one of his deaf pupils as follows: "Mr. Anderson did not use the sign-

language much, but when he did it was quite natural. He also used the manual alphabet. He was a gentleman of imposing appearance, and his motions and expressions were clear and graceful." It should be stated here that he knew no "conventional signs."

As to the success of the school, the testimony is not altogether one way. There were "oral failures" then as now, and these and their friends have left behind evidence of their dissatisfaction. It seems probable, also, that the old complaint that in oral schools general education is sacrificed to some extent in the zeal for speech could be successfully lodged against this one. Some of the pupils afterwards entered the State School for the Deaf at Danville, Kentucky, and it appears that, judged by the ability manifested and the length of time they had been in school, their attainments in English were unsatisfactory. Mr. Jacobs, Superintendent of the Kentucky School, in one of his reports* referred to the matter in a not altogether complimentary manner. But it was natural that Mr. Anderson should fall into the error of spending an undue proportion of time in drilling his pupils in articulation. Besides being isolated and therefore lacking the spur of seeing what other schools for the deaf were doing in language-teaching, the acquisition of speech was the test by which the school was obliged to stand or fall. It would appear, however, from the fact of the advanced deaf pupils reciting with the hearing ones, that, after they reached a point that permitted of their being placed in such classes, their advancement in the English branches should have been reasonably rapid. Perhaps this was the case with those who reached that point, but, unfortunately, many did not remain long enough to do so. As to speech-teaching, a fair measure of success seems to have been attained, judging from the testimony of those who should know and the manner in

*Report of Kentucky School for the Deaf, 1866–'7, page 20.

which some of the living pupils use spoken language. Some pupils failed altogether to learn speech, others partly so, but on the other hand some learned an amount in the highest degree creditable to their instructors. The writer is acquainted with a number of congenitally deaf pupils of this school who possess speech in degrees varying from the ability to utter a few words up to that required to carry on conversations on ordinary topics. There were others, now dead or lost sight of, whom apparently authentic information credits with a sufficient degree of advancement on leaving school to entitle them to be considered oral successes. As further bearing on this point, the opinions of two former pupils of the school—one hearing, the other deaf—are given. The first is that of a hearing gentleman, now living in Missouri, who says:

"I must say that the school was a success. It is true that many of the deaf failed to learn to talk, but this was owing to the very short time they stayed for instruction."

The other opinion is that of a successful business man who uses speech freely, though with the limitations common to the congenitally deaf:

"In this effort [teaching speech to the deaf] he seemed successful. It is to his credit that I learned to talk. Had he been young when he started this school, and in a city instead of such an isolated place, he would have, in my opinion, been one of the greatest oral teachers of the present time."

Mr. Anderson died in 1854, and his son, desiring to engage in other pursuits, gave up the school at the close of the term. In view of what he accomplished, Mr. Anderson's name deserves an honored place among the pioneer teachers of speech in this country.

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WHAT KNOWLEDGE WILL BE MOST USEFUL TO OUR PUPILS AFTER LEAVING SCHOOL?

THE essential objects of the education of the deaf, considered from a material point of view, are twofold: 1. The acquisition of a working knowledge of the English language. 2. The learning of some useful trade. All other branches of education should wait on these, and should be subordinated to them. If we glance over the course of study of some schools for the deaf, we are impressed by the long list of subjects that are to be taught in a brief ten-year course. The question naturally occurs to the thoughtful mind: Can all these things be taught, and well taught, in the time allotted? The deaf child comes to us with no language at all. We have to begin, in that respect, in the very cradle, as it were. After four or five years of the most careful teaching, that deaf child is still far behind the hearing child of six or seven years as regards fluency and correctness in the use of language. In other words, we have to devote nearly half of the course to placing the deaf child on the same plane, as regards language, as the hearing child just ready to enter school.

Bearing this fact in mind, the danger of a too elaborate course of study is obvious. In the attempt to teach too much in a limited time, the knowledge imparted is apt to spread out over so great an area as to be perilously thin in places.

There is no duty devolving upon the instructor of the deaf more imperative than that of exercising careful selection and discrimination as regards the kind of knowledge to be imparted, to the end that the time assigned may be used to the greatest practical benefit of the children.

At the May meeting of the Teachers' Association of the Minnesota School for the Deaf, the discussion was based upon the ideas just set forth. The programme of the meeting was arranged and carried out by a committee of three: J. L. Smith, Chairman, L. C. Tuck, and Amy E. Snider. After an introduction by the Chairman, the following papers were read, in the order given: 1. "Our Language Work in its Practical Relation to the Future of Our Pupils," by Miss SNIDER; 2. "Common-School Studies in Relation to their Practical Value," by Mr. SMITH; 3. "The Value of Discipline and Training Apart from Mere Knowledge," by Mr. TUCK.

What follows is mainly a compilation or quotation from the several papers. Wherever quotation-marks are used, it may be understood that the words of the writer of the paper are quoted verbatim.

INTRODUCTORY.

"In the savage state man places ornament before utility. Barbarous peoples will barter their dearest possessions for cheap and gaudy trinkets. . . . With the advancement of civilization, man has more and more abandoned the merely ornamental for the useful. But in the matter of education this change has been slower than in physical and material things. It is only within comparatively recent years that there has been a reaction against the old, dry, scholastic methods, in favor of more rational and practical education. The growth of the kindergarten, nature study, child study, hygiene, manual training schools, agricultural colleges, etc., marks the change from the old to the new, from the ornamental to the practical, in education.

"The problem that confronts the teacher of the deaf is this: Given five hours a day, nine months of the year, for ten years, to transform an utterly ignorant being into

an educated citizen. We cannot teach everything in ten years. What, then, shall we teach?

"There are two questions which we should ask ourselves in regard to every subject which we teach or plan to teach: 1. Is its importance worth the time required to teach it? 2. Are there not things of more importance to which we could better apply the time? These questions should be asked and answered without the least regard for their effect upon the catalogue of studies, upon written examinations, or upon public exhibitions. There are studies which make a fine showing on paper, or sound well when spoken of to visitors, but they are of little or no practical value.

"Herbert Spencer says: 'To prepare us for complete living is the function which education has to discharge; and the only rational mode of judging any education is to judge in what degree it discharges such function.'

"What are the prime objects of education? They may be classified as follows, in the order of their importance:

"1. Self-support.

"2. Support of the family.

"3. Social and civil duties.

"4. Intellectual adornment.

"In arranging and carrying out a scheme of education for the deaf, we must bear in mind the limited time we have, and direct all our energies toward training our pupils so that they may not become burdens upon society, so that they may be able to assume and to discharge properly the family relation, and so that they may be capable of performing the common duties to society and to the State which are expected of all educated people. If, after we have done these things well, there remains any time, we may rightly devote it to such training as contributes mainly to intellectual adornment."

Our Language Work in its Practical Relation to the Future of Our Pupils.

The general welfare of the deaf after leaving school, including social, mental, and moral prosperity, depends more upon the mastery of written or spoken language than upon any other one thing. Therefore, the beginning and end of our instruction should be to give each pupil as facile a use of language as time and circumstances permit. "Of the many language lessons which may be taught with pleasure and profit, the great question is to decide which will prove of the most practical value in daily intercourse with the world."

It is important to consider the circumstances which are likely to surround our pupils in after life, and adapt our teaching largely to those circumstances. The great majority of our pupils come from the humbler walks of life, and their lot in life is likely to place them on the farm, in the workshop, or in domestic surroundings. It is highly important, therefore, that we should endeavor to make them familiar with the daily language of such environments. The names of the common implements of the household, the farm, and the workshop, as well as the forms of language used in directing or describing the use of such implements, are of great importance. But it is just such things that many of our older pupils do not know, though they may be well advanced in history, philosophy, grammar (technical), physiology, and kindred branches. "Many of the girls in the advanced classes show surprising ignorance of the most common names of articles in the home, kinds of food, methods of cooking, and the language used in connection with them. If objects are presented to them, they know what they are for, how used, and probably know how to make use of them; but, if questioned concerning them, they are not

able to name the objects correctly or to describe the actions in English.

"A graduate of one of our schools, who had worked in a carpenter shop, said that he could not name many of the tools he used, nor describe many of the ordinary shop supplies, such as the size and shape of nails, and descriptions of lumber. Neither could he write the actions describing their use. Such a one, though a skilled workman, would find innumerable difficulties in his trade, if, indeed, he could find any one kind enough to employ him."

Our boys and girls need to be familiarized with the language used in describing the objects and actions with which they are surrounded, at school and at home. Begin with the names of articles of clothing and of their parts, and the actions of putting on and taking off. Then follow up with the language used in describing the performance of the toilet. Carry it on into the dining-room, the schoolroom, the chapel, the workshop, and through all the routine of school work. Then extend it to home life, to farm life, and to all the branches of industry with which the children have had, or are likely to have, contact. In this connection Miss R. R. Harris's "Handbook in Language" may be found very useful and suggestive to both teacher and pupil.

"I think the best way to teach the language of domestic or industrial life is to give great prominence, all through the course, to connected action work, following the Gouin method. If a pupil learns the names and expressions peculiar to any subject and can describe the actions, he is well prepared to understand commands and execute them. One of the principal requirements of an employer is the ability readily to understand and execute orders. Lacking this ability, it is hard to get a position, and still harder to hold it.

"The ability to ask and answer simple questions is con-

ceded by all to be one of the greatest needs of the deaf. Most of the transactions of life are carried on by means of conversation. One constantly needs information and must ask questions. Wishing to give information creates the necessity of answering questions. Feeling unable to converse as hearing people do, accounts for the isolation of the deaf in many communities, as they cannot ask and answer the simplest questions. Inability to converse often prevents skilled workmen from obtaining employment, not to mention the difficulties met in many other lines. Let a deaf person go into the office of some busy man, take out his pad, and try to state his business, seeking some kind of employment. A few pertinent questions misunderstood and incorrectly answered are enough to convince the man that he has no time to bother with such a person." If we had a complete list of all the deaf men and women from our schools who failed to get employment from inability to ask for it intelligently, or who lost a place from inability to comprehend written instructions, the length of the list might cause us teachers serious thought and an amendment of our methods.

One of the leading graduates of the Minnesota School, who has associated largely with hearing people since he graduated, urges, most earnestly, that more time be given to instruction in colloquial language. He learned, through bitter experience, what a drawback the lack of such language is, both socially and industrially. He has overcome his own deficiency in this respect, by force of will, and offers his experience for the benefit of deaf children who are still at school.

Letter-writing is an important and practical phase of language work in our schools, and we can well afford to devote more time to it, in the place of other forms of composition-writing. The language of letters deals with everyday matters, and facility in letter-writing implies facility in the use of colloquial language. Special attention

should be given to formal and business letters, as persons receiving such letters are apt to judge of the intelligence of deaf writers from the wording and style of the letters.

So much has been said and written about the value of reading as an aid to the acquisition of a good English style that it is not necessary, in this article, to do more than call attention to it as the surest means by which the deaf person can advance toward fluency and correctness in the use of language after leaving school.

Common-School Studies in Relation to Their Practical Value.

"There is every reason for teachers of the deaf to question themselves seriously whether the tendency is not toward a multiplicity of text-books at the expense of what is far more necessary and important to the welfare of the pupils. Says Herbert Spencer: 'Only when his acquaintance with the objects and processes of the household, the streets, and the fields is becoming tolerably exhaustive—only then should a child be introduced to the new sources of information which books supply. . . . Intellectual progress is necessarily from the concrete to the abstract. But, regardless of this, highly abstract subjects, such as grammar, which should come quite late, are begun quite early.'

"Technical grammar was never intended to be a means of learning language, but rather as a means of finishing and polishing a language already learned. If we introduce the study of technical grammar before our pupils have a fluent use of reasonably correct language, we are putting the cart before the horse, and doing an injury to the pupils by using time that might much better be employed in practical language work. . . . I have now in my class two pupils who can diagram and analyze the most intricate sentences with hardly an error, but, when

they are called upon to produce original language, they flounder around hopelessly in a maze of words and phrases. On the other hand, I have a pupil who has a fluent command of English, but who cannot make head or tail of diagrams, analysis, and other grammatical formulas. My conclusion is that we could very well afford to dispense with technical grammar, save in the very highest classes, and devote the time thus gained to more practical means of imparting English.

"There are two forms of history which are of sufficient importance to demand our attention. They are Current history and United States history. I give the first place to Current history, for I think it more useful for our boys and girls to know what is going on in the world about them than to know what happened years and years ago. . . . So long as our pupils are hesitating and faulty in language, I hold it a serious mistake, if not a wrong, to spend time upon Ancient or English history. I would even go so far as to hold United States history in abeyance if I felt that the time could be better devoted to language."

A very little geographical knowledge will go a long way with our pupils. It should be physical in its nature, more than political, and should treat of the locality, the state, and the nation, in order. It is a waste of valuable time to teach the meaningless definitions of the natural divisions of land and water, and the names of all the insignificant rivers, lakes, mountains, towns, etc., in Africa and Asia. By the intelligent use of the map and the globe, supplemented by instructive talks from the teacher, a more practical knowledge of geography can be given to deaf children than by the use of an exhaustive text-book which requires hours and hours of wearisome study.

"The importance of arithmetic as a school study depends upon the kind of arithmetic we teach. A great deal of arithmetic work, if judged by the severe test of

utility in after life, would be pronounced pure foolery. I have known pupils who attained such skill in figure juggling that they could do intricate examples in compound interest, partial payments, square and cube root, yet who would be at a loss to do a simple mental operation in buying and selling goods in a store. If they had been sent down to market to measure and appraise a load of wood, they would have failed utterly. Yet they had probably passed through mensuration with flying colors. A great deal of the arithmetic work taught in schools is figure jugglery, without anything practical in it. What our pupils need, and what we should try to give them, is, First, the ability mentally to add, subtract, multiply, and divide small numbers rapidly and accurately. Second, the ability to work out simple problems in buying and selling, such as are actually performed every day in the stores and markets. Third, the ability to weigh and measure, and appraise at market values, articles which they are likely to buy or sell when they take their places in the industrial world. Fourth, the ability to compute simple interest on time notes. The tendency toward an increased amount of written and text-book work in arithmetic should be checked, and the preponderance of time be given to mental work.

"In physiology and hygiene, such matters as food, clothing, exercise, rest, exposure, etc., and their bearing upon the health and happiness of man, should be clearly set forth. But to go into the structure and composition of the human frame, organs, and tissues is a waste of time.

"Nature study is one branch of education in which we could well afford to do more. Nature is the greatest teacher. Whatever may be the life occupation of our pupils, there is something in the study of nature that will benefit them. The boy or girl who once becomes truly interested in nature is bound to improve, for a

desire will be awakened to know more about things that are seen, this knowledge will be sought in books, and a reading habit will be formed.

"There are many social, legal, and political obligations which our boys and girls will be expected to fulfill after they have attained to adult years. They should all have practical instruction in common law points before leaving us. I know of one deaf man who endorsed a note for a friend, not knowing that he might have to pay it. He was only saved from heavy loss by the kindness of the bank president. I have read letters, written by deaf persons, containing language which would have landed the writers in prison, if complaint had been made to the proper officials. A deaf man in the east was cheated out of considerable property by being induced to sign papers that he did not understand. Cases like these show the importance of giving our pupils some instruction in municipal, county, state, and national laws, in relation to the rights of person and property.

"Political instruction is not so important, but something should be done in the way of a brief course in civil government. If we can train our young men to vote intelligently and conscientiously, we have done our duty.

"As to training in character, the importance of that was fully set forth in a previous number of the *Annals* (xliv, 41–53), under the heading of 'An Outline Course in Manners and Morals.'

"Speech and lip-reading occupy a prominent place in the education of the deaf. The test of utility should be applied to them as rigidly as to any other branch of education. If, by employing speech and lip-reading, we can best fit our pupils for the practical duties of life, then it is a wrong not to employ them.

"The problem in education is the same as the problem in mechanics,—how to economize time and power. Inventive genius has steadily raised the percentage of

power utilized in machinery. If there were some kind of a dynamometer which could indicate the amount of teaching force expended, as well as the amount utilized, we should be amazed, probably, at the vast amount of teaching energy that is wasted in teaching things that are not, and never can be, of any practical use to our pupils. If we can give them a practical command of spoken or written English, with enough other information to enable them to make their way successfully and happily in life, then, if there is time left, we may add some of the educational frills and furbelows. But so long as our pupils are wofully deficient in the ability to use common English, and in practical knowledge, the teaching of a smattering of sciences is a wrong that should be righted."

The Value of Discipline and Training Apart from Mere Knowledge.

"The mere getting of knowledge, because it is knowledge and makes us wise, is of no more use to us than the miser's hoarded gold is to him. Knowledge that we may use, that will be directly helpful to us, is something that we are quick to value and desire. But to consider this the end and aim of education is to take the very narrowest view of the subject. One of the most ancient, as well as one of the best, definitions of education is that of Plato, who said, 'The purpose of education is to give to the body and to the soul all the beauty and all the perfection of which they are capable.' If this definition be accepted, education lasts from the cradle to the grave. . . . The acquisition of knowledge is only one of the many factors that go to make up education.

"The man who has been in the army carries the stamp of the army about with him forever after. He knows how to walk and how to carry himself. The means by which he arrived at this acquisition—the hours of hard,

monotonous drill, drill, drill—are gone and forgotten, but the springy step and the erect and easy carriage remain to be a help and an advantage to him as long as he lives. 'The baby knows no rules. It seeks only what seems pleasant to itself. It is kept by force from doing what would be harmful to itself or to the persons or things about it.' It is not knowledge and it is not physical or mental growth that change it into the well-balanced adult, whose life is valuable to himself and to the world. The body must be educated, the senses must be trained to sharpness and accuracy, the hands must learn skill, the mind must be cultivated, the feelings must be restrained and put under control.

"We teachers are like the overzealous housewife whose work is never done. In her eternal battle with dirt, she sometimes becomes so absorbed that she loses sight of the fact that the end and aim of all her labors is not the doing away with dirt and dust, but the maintaining of a comfortable home to be used and enjoyed. In our efforts to impart knowledge, we are apt to overlook the fact that knowledge itself is not the end and aim of education.

"That knowledge will be most useful to our pupils after leaving school which will enable them to continue by themselves the work that we begin here. To this end, we should keep constantly in mind the training and discipline, as well as the direct results in the increase of their knowledge, which follow from our labors. The training and discipline will endure and bear fruit long after the knowledge is forgotten.

"The school is very like the world on a smaller scale. The habits which our pupils form, or which we cultivate in them in the school-room and shop, are the habits which will stay with them after they leave us. If we show them the necessity and reasonableness of obedience to the school rules, they will respect and obey all law. If we lead them to apply themselves with industry and perse-

verance to their lessons and work, we lay firm foundations for the same habits in their future lives. In short, there is no virtue or good quality of character that we may not plant and cultivate.

"No one lives or should live entirely by himself. Every one is bound to others by ties of obedience, love, and usefulness. If our pupils leave us without beginning to understand and to practice these virtues, they are deficient in the education which, more than any other, helps to make that beauty and perfection of body and soul to which it is the privilege and duty of man alone of all God's creatures to strive to attain."

The reader of the *Annals* is asked not to misunderstand this article as intending to belittle the importance of a broad education. Its aim is, rather, to magnify such things as may have the most direct influence upon the pupils' lives. It takes a stand against the crowding and contracting of the necessary and important for the sake of the superficial and ornamental; against paying tithe of mint, anise, and cummin, while neglecting the weightier matters of the law.

There are deaf children in all our schools who are so happily endowed by nature that they can learn language, and all else prescribed in our courses of study, without much difficulty, in the allotted time. They graduate, a credit to themselves and to us, and may then go to college and pursue its course with equal success. But such form but a small percentage of the whole number of the deaf, and they must not be taken as a gauge of our success in the work. To estimate correctly what our schools are doing for the deaf we must turn our backs on these bright and shining lights, and, going among the highways, byways, and hedges, study the conditions as they are with the toilers, the proletariat of the deaf. Put to these the test of written, spelled, or spoken English, on the affairs

of every-day life, and try to realize what a detriment, what an embarrassment, imperfect use of language and ignorance of common things are to them. At the same time consider the hours and hours which were spent, rather wasted, at school in trying to teach these same people definitions, formulas, and facts that are of no practical benefit to one in a hundred. Then let us go back to our school-rooms and direct our energies to better purpose.

JAMES L. SMITH,
Instructor in the Minnesota School, Faribault, Minnesota.

THE SIXTH SUMMER MEETING OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

THE Sixth Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf was held at the Clarke Institution, Northampton, Mass., June 22 to 28, 1899. The number of members of the Association in attendance during the whole or a part of the meeting was 181; of non-members, including pupils and former pupils of the Clarke School and citizens of Northampton, 176; of superintendents and principals of schools for the deaf, 31. A very large majority of the persons present were women.

The exercises of each day began with school-room work conducted by teachers of the Clarke School in their respective class-rooms. This lasted for an hour and a half. Then for an hour there was a lecture by some distinguished educator not connected with the instruction of the deaf, and the remaining hour of the morning was occupied with the reading of short papers by members of the Association. The afternoons were left free for the pleasant excursions to places of interest in which Northampton and its vicinity abound, and in the evening there were

lectures, readings, and social gatherings. Sunday evening was devoted to memorial tributes to members of the Association who have died since the last meeting was held, in 1896. The programme of the meeting was as follows:

THURSDAY, JUNE 22.

10.30 A. M.—Opening Session.
Addresses of Welcome.
Hon. F. B. SANBORN, Vice-President Corporation of Clarke School.
J. H. CARFREY, Superintendent of Public Schools, Northampton.
Address by the President, Dr. ALEXANDER GRAHAM BELL.

Evening.—
Reception.

FRIDAY, JUNE 23.

9.30 A. M.—Schoolroom Work.
(Two classes in each department—the Primary in Dudley Hall, the Intermediate in Baker Hall, the Grammar in Clarke Hall.)

11.00 to 1.—Lectures and Papers.
The Teacher and the State:
Prof. JOHN M. TYLER, Amherst College.
University Experiences:
A. LINCOLN FECHHEIMER.
Kindergarten Work in Schools for the Deaf:
EDWARD C. RIDER, Malone, N. Y.
Pictures, and How to Use Them:
Miss FLORENCE MCDOWELL, Philadelphia, Pa.
The Use and Abuse of Pictures:
Miss MARGARET STEVENSON, Jacksonville, Ill.

Evening.—
Reading by Mr. GEORGE W. CABLE.

SATURDAY, JUNE 24.

9.30 A. M.—Schoolroom Work.
11.00 to 1.—Lectures and Papers.
Laws of Pedagogy:
Prof. WILLIAM A. CLARK, Harvard University.
The Re-enforcement of Speech by Writing:
Miss MABEL ELLERY ADAMS, Boston, Mass.
The Relation of Language to Mental Development and of Speech to Oral Teaching:
S. G. DAVIDSON, Philadelphia, Pa.
The Association Magazine:
F. W. BOOTH, Philadelphia, Pa.

Evening.—
Lecture—Habitual Hearing:
Dr. CLARENCE J. BLAKE, Boston.

MONDAY, JUNE 26.

9.30 A. M.—Schoolroom Work.
11.00 to 1.—Lectures and Papers.
Some Recent Phases of Educational Thought:
THOMAS M. BALLIET, Superintendent of Schools, Springfield.
Memory in Education:
WESTON JENKINS, Trenton, N. J.
Rhythm as an Aid in Voice-Training:
Miss SARAH ALLEN JORDAN, Boston.
The Walls of Our School-Rooms:
Miss CORA R. PRICE, Philadelphia, Pa.
Evening.—
Illustrated Lecture on Japan:
Dr. A. G. BELL.

TUESDAY, JUNE 27.

9.30 A. M.—Schoolroom Work.
11.00 to 1.—Lectures and Papers.
Nature Study and Elementary Science:
Prof. ARTHUR C. BOYDEN, Normal School, Bridgewater.
What Shall We Do With Our Feeble-Minded Pupils?
Dr. A. L. E. CROUTER, Philadelphia, Pa.
Voice-Culture:
Miss ANNA C. ALLEN, Fulton, Mo.
How to Correct Defective Articulation:
Miss ELLA SCOTT, Mystic, Conn.
Evening.—
Business Meeting.
Musical Entertainment.

WEDNESDAY, JUNE 28.

9.30 A. M.—Schoolroom Work.
11.00 to 1.—Lectures and Papers.
A Few Books:
Miss KATHARINE FLETCHER, Northampton.
Physical Training and Games:
HARTVIG NISSEN,
Director of Physical Training, Boston Public Schools.
Closing Exercises.

The lectures by eminent educators not connected with the instruction of the deaf presented some phases of general pedagogy that were interesting and profitable for all

teachers. Especially suggestive were Mr. Balliet's on "Some Recent Phases of Educational Thought," and Dr. Blake's on "Habitual Hearing."

The papers read by members of the Association were thoughtful and practical. Being few in number and covering a limited range of topics, they probably left a more vivid impression upon the minds of those present than if their number had been greater and their range wider. One that was listened to with unusual interest was Mr. A. Lincoln Fechheimer's description of his "University Experiences." Mr. Fechheimer is congenitally deaf. After graduation from the Clarke School he spent four years in hearing schools in Cincinnati, and then pursued a four years' course of study in the School of Architecture of Columbia University, from which he has recently been graduated with the degree of Bachelor of Arts. Of the various devices by which he obtained notes of the lectures given by the professors, that which he found most convenient was copying the notes taken by a classmate word by word as he sat beside him in the lecture-room. He expressed the opinion that any deaf person with a good command of language, and able to understand others and make himself understood fairly well, could successfully pursue a course of instruction in a college for hearing persons.

A feature of the meeting which competed successfully with the attractions of the afternoon excursions was the exhibition of the Akoulallion,* kindly brought for that purpose by Mr. E. H. Currier, Principal of the New York Institution. The results of the experiments at Northampton witnessed by the writer on two afternoons were not remarkable, but we are informed that some made when he was not present were more successful. Mr. Currier, who has already tested the instrument to some extent in the New York Institution, and whose previous

* See the June number of the *Annals*, pp. 301–306.

investigations and inventions in connection with various aids to hearing render him a competent judge, believes that the Akoulallion possesses considerable merit in the possibilities of its further development if not in its present form, but he will give it a thorough trial with the pupils of the New York Institution before expressing a definite opinion.

The presence of the deaf-blind Linnie Haguewood with her teacher, Miss Dora Donald, added interest to the meeting. Linnie has attended the South Dakota School for the Deaf during the past year and has made marked progress in language and general information. Miss Donald expects to continue her education in connection with a school for hearing children next year. Linnie's surprise that experienced teachers of the deaf present did not know the manual alphabet, and her desire to teach it to them at once, created some amusement.

The most valuable of all the exercises of the meeting was perhaps the class-room work of the Clarke School. Few teachers have the opportunity to see any school—scarcely, indeed, any class—except their own during term time, and the opportunity of observing the methods of instruction pursued in such an admirable oral school as the one at Northampton was highly appreciated. During the hour and a half of each day devoted to this purpose, the teachers and pupils of the Clarke School in six class-rooms of different grades illustrated the ordinary work or the review work of the year, and the rooms were constantly crowded with teachers from other schools, who for the time being became eager learners. For this opportunity, and for that of examining at all hours the excellent illustrative material with which the schoolrooms and library are equipped, much of it the work of the teachers themselves, as well as for many courtesies during the meeting, the members of the Association are greatly indebted to the principal and teachers of the Clarke School.

E. A. F.

THE MEETING OF DEPARTMENT SIXTEEN OF THE NATIONAL EDUCATIONAL ASSOCIATION AT LOS ANGELES.

THE Annual Meeting of the National Educational Association was held this year at Los Angeles, California. It was an imposing assembly of the educational forces of the country, both in respect of numbers and of *personnel*. The local papers claimed that fifteen thousand persons were registered at the headquarters of the Association. Of course, a good many took advantage of the low rates offered by the transportation companies to visit California, but there were present probably eight thousand men and women actually engaged in school work of every grade from the kindergarten to the university. As in most gatherings of this kind, the women were largely in evidence, and added greatly to the gaiety and brightness of the vast general congregation in Hazard's Pavilion, not only by their earnest faces, but by their summer gowns and head-gear.

Department Sixteen, embracing the educational interests of the deaf, the blind, and the feeble-minded,* occupied the afternoons of Wednesday, Thursday, and Friday, July 12, 13, 14. The meetings were held in the Broadway Presbyterian Church with a capacity of eight hundred. On Wednesday a good audience was present, among which were many friends of the little day-school for the deaf in Los Angeles. The State Institution at Berkeley was also well represented, and, considering the distance and expense, there was a fair showing from schools east of the Rocky Mountains.

In the absence of the President Mrs. KATE F. BINGHAM presided. The proceedings were opened by a short ad-

* Only the portion of the proceedings relating to the deaf is here reported, as that alone comes within the scope of the *Annals*.

dress from President DAVID STARR JORDAN, of Stanford University. It was a pleasantly worded speech of sympathy with the great work of educating the deaf, and of congratulations upon the inclusion and recognition of this benefaction in the field embraced by the National Educational Association.

Mr. CHARLES S. PERRY, of Berkeley, read a paper under the heading, "Why Should Deaf Children be Allowed from Five to Ten Years Less Time in School than Hearing Children?" The subject was prescribed for him, but as the fact seemed to be from his statistics that deaf children in many, if not most, States are allowed about as much time in school as parents will take advantage of, there was not much to say on the title matter, and so the speaker branched off into an interesting discussion of practical school-room methods and appliances, and the necessity of a sympathetic spirit on the part of the teacher, all of which the long experience of Mr. Perry fittted him to deal with authoritatively.

"All Along the Line" was an earnest paper by Mrs. KATE F. BINGHAM. It was written from the point of view of a mother of two partially deaf children to whose education she has devoted her life. She believes in "pure oralism," day-schools for the deaf, co-education of deaf and hearing children, and early instruction of the deaf. She does not admit that deafness causes any disturbance of mental processes, but claims that deaf children think and are just like their normal companions.

Miss HELEN TAYLOR, kindergartner of the Los Angeles Day-School for the Deaf, read a paper on "The Importance of a Right Beginning," which voiced the experience and enthusiasm of a wide-awake teacher in an interesting field.

In "Vacation Schools for the Deaf" Miss MARY MCCOWEN, Principal of the Chicago Public Day-Schools for the Deaf, treated the subject with her usual intelli-

gence and knowledge, drawn from observation of similar schools established for hearing children. One could not fail to be impressed with the facts Miss McCowen set forth in regard to the work accomplished in these latter schools, but whether such an innovation is necessary or desirable with the deaf is a question open to debate.

In the discussion which followed the reading of the papers, Mr. J. A. Foshay, Superintendent of Schools in Los Angeles; Mr. Albert G. Lane, Superintendent of Schools in Chicago; Dr. Wm. E. Waddell, President of the Parents' Association; Miss Mary McCowen; Miss West, of Philadelphia, and Messrs. Warring Wilkinson and Frank O'Donnell, of the California Institution, took part. Mr. Foshay told of the establishment of the day-school for deaf children in Los Angeles; of its experimental nature, the interest in the work, and the satisfaction so far with the results of the experiment. Mr. Lane and Miss McCowen expressed favorable opinions concerning the need and work of day-schools in Chicago. Miss McCowen's account of the formation of societies or clubs by mothers of deaf children was interesting. This education of parents to co-operate with the school in furthering the education of their children suggests a field of great usefulness.

Dr. Waddell, as a parent of two deaf children, spoke feelingly in favor of the day-school. His remarks were largely from the sentimental side of the question, but his utterances were those of a man who felt the responsibility of his parental relation; who wanted to do the best thing for his boys; who had sought that "best thing" with earnestness; but whether he had found it, did not seem so clear.

Dr. Wilkinson, while admitting that day-schools for the deaf might, under proper supervision and restrictions, serve a useful purpose, opposed their general introduction as a State policy on the broad ground of increased

cost, of inefficiency due to lack of competent teachers, proper classification, needful discipline, and regular attendance, and often from the misfortune of home environment. He endeavored to show that in most cases the day-school either disappeared or was converted into an institution, instancing the day-schools at Pittsburgh, at Philadelphia, at Scranton, and at Portland, each of which, after a varied experience under the best auspices, has found the theory and practice of the day-school inadequate. He read letters from the principals of those institutions, whose testimony, as well as that of the Rev. Dr. Stainer, the father of the London day-schools, was most unfavorable as to the success and efficiency of such schools.

Dr. Wilkinson was disposed to think, however, that, in spite of the many and serious objections to day-schools as a separate and independent department of public instruction, they might be made to serve a useful purpose if properly located, officered, and supervised, but that they should be branches of the State Institution and under the control of its management in connection with the Superintendent of Public Instruction. Pupils should be admitted at five or six years of age and remain till ten or twelve years old, but the whole time should be spent in the teaching of speech and lip-reading under the very best teachers. When the pupil is at the limit of age, an examination should determine whether the Oral method should be continued or abandoned for the Combined System or the Manual method. Some such device as this ought to harmonize all differences between those who are seeking the best good of the deaf, irrespective of methods.

Mr. O'Donnell, in a forcible speech, took exception to a remark made by Dr. Waddell, concerning the undesirable intermingling of children of different social conditions in an institution, which remark the speaker regarded as out of place in democratic America. Mr.

O'Donnell spoke from an experience of twenty-five years, half of which was spent in English schools for the deaf, where he had an opportunity to observe the working of day-schools. The opinion thus derived was very unfavorable to the system.

At a subsequent meeting of the Department, the following officers were elected to serve for the ensuing year: Dr. Warring Wilkinson, Berkeley, California, President; Miss Mary McCowen, Chicago, Illinois, Vice-President for the Deaf; Mr. Edward E. Allen, Philadelphia, Pennsylvania, Vice-President for the Blind; Dr. Arthur C. Rogers, Faribault, Minnesota, Vice-President for the Feeble-Minded; Dr. Edward Allen Fay, Washington, D. C., Secretary-Treasurer.

An interesting and pleasant feature of the Los Angeles meeting was a dinner given at "Illicks" on Thursday evening to the visiting members of the Section, by the local friends of the deaf, represented by Dr. Waddell. It was a gracious thing to do, and the courtesy was gratefully appreciated by the guests from abroad.

SCHOOL ITEMS.

American School.—Miss Lucy M. Clark has resigned to be married, and Miss Hattie M. Bear, who was a normal student at Gallaudet College last year, has been engaged as a teacher for the coming year.

Colorado School.—Mr. Max Kestner has retired, and Miss Mary E. Griffin, of the Minnesota School, and Miss Elizabeth Rice, of Missouri, have been appointed teachers.

Illinois Institution.—Mr. C. Spruit, a teacher of many years' experience in the Iowa School, Miss Mabel M. King, of Jacksonville, a graduate of the training class of the McCowen School, and Miss Frances Wait, who returns to the work after a year of rest, have been appointed teachers to fill vacancies

occasioned by the retirement of Mr. F. M. Driggs, Miss Anna B. Gilchrist, and Mr. E. S. Henne.

The Report of the Illinois State Superintendent of Public Instruction for the biennial period ending July 1, 1898, contains a Report from Dr. Gordon on the education of the deaf, in which his views concerning the proper organization of schools, methods of instruction, and kindred topics are ably set forth. Dr. Gordon's Report, with the addition of some supplementary matter, has been reprinted separately at the Institution press.

The Auricular Department has been discontinued, in the belief that the same ends may be accomplished more effectively in the various classes of the Oral Department.

The old "drinking-well" has been abandoned, after a chemical and bacteriological examination of the water, and a new well, eleven feet in diameter, has been sunk, as far as possible from sources of contamination, one thousand feet from the boiler house. The new pumping system supplies water by direct pressure, dispensing with the storage tanks heretofore used. A contract has been let for the early re-roofing of the schoolhouse building, with Brownsville, Maine, slate of the best quality. The electric-lighting plant, probably the oldest in any public institution in the world, has been completely renewed and electric power has been substituted for steam power. The new plant includes two direct coupled generators of 50 K. W. capacity, and four motors: one twenty-five horse power, one fifteen horse power, one ten horse power, and one two horse power. The generators are connected directly with new engines of sixty and forty horse power, respectively. The entire heating system has been overhauled. New heating mains of seven-inch and six-inch pipe have been laid, and the returns from every radiator in the system are furnished with automatic thermostatic valves by the Scott Valve Company, of Chicago. These changes, in connection with improvements made last year, effect, practically, a complete renewal of the heating plant and the transformation from a high-pressure to a low-pressure vacuum system at a very moderate outlay. In the way of house furnishing, new, single, all-metal bedsteads and mattresses of superior quality, all made to order, replace the ancient equipment of the entire establishment.

Indian Territory School.—Miss Laura A. Rowland writes that she has been conducting, for more than a year, a school for the deaf and the blind at Fort Gibson, Indian Territory. It is supported by charitable contributions, but Government support is hoped for. There are seventeen pupils, of whom six are Indians (Cherokees and Choctaws) and the rest white.

Indiana Institution.—Mr. Richard O. Johnson has been re-elected Superintendent for the next four years, from September 1, 1899, to September 1, 1903. Miss Mabel Eddy, who was trained at the Clarke School, has been added to the corps of teachers, and another teacher is yet to be appointed.

The school building has been remodelled, giving three new schoolrooms and toilet rooms. The steam-heating plant has been rearranged, and a large fan and electric motor introduced. A separate residence for the Superintendent has been built.

Jews' Home.—The new buildings of the Jews' Deaf and Dumb Home, The Grange, Nightingale Lane, Wadsworth Common, London, England, were consecrated with appropriate ceremonies, by the Chief Rabbi, May 14, 1899. The buildings are commodious and handsome, constituting a noble monument to the generosity of the Jewish community in London.

Kansas School.—Miss Frances McKinley, Mr. J. W. Thomas, Miss Leslie Hoge, Miss Kate Lindsay, Mrs. Grace Caress, Miss Susie Boyd, and Miss Hattie Yoe, who were teachers here two years ago, have returned to the work, and Mr. Paul Hubbard, a graduate of the Colorado School and for some time a student of Gallaudet College, and Miss May Murry, formerly teacher of art in the Nebraska Institute, have also been added to the corps of instruction. The officers who were in charge of the shops two years ago have been restored to their positions, with two exceptions, and Mrs. Hammond has resumed her former position as matron.

Kentucky School.—The following teachers resigned their positions at the close of school last June: Mr. Herbert E. Day, to accept a chair in Gallaudet College; Mr. Thos. P. Barbee, to attend a theological seminary preparatory to entering the

ministry of the Presbyterian Church; Mrs. W. K. Argo, to join her husband in his work at the head of the Colorado School; and Mrs. Anne W. Rogers, who retires from the profession. To fill the vacancies caused by the above resignations, the following appointments were made: Mr. Thos. S. McAloney, of the Alabama School; Miss M. L. Wardroper, of the Arkansas Institute; Miss Susan Doneghy, and Miss Elizabeth Reed, both of Danville, and recent graduates of the training class of the McCowen School.

Michigan School.—As the pupils were leaving for home, on June 7, Mr. John J. Buchanan, a graduate of the School, who had taught for thirty-two years there, fell dead on the front porch from apoplexy. He was very greatly beloved, and his sudden death at such a joyous time made this the saddest home-going the pupils of the Michigan School have ever known. The vacancy has been filled by the appointment of his son, Mr. Arthur P. Buchanan. The vacancy caused by the resignation of Miss Marion E. Tyrrell will be filled by promotion of younger teachers.

Plans and specifications for the new school building have been prepared, and bids will be opened on September 6. The building will be of three stories and will have an assembly hall, seating 600 on the floor and 250 in the gallery, forty-two class-rooms, office, reception room, library, apparatus room, two teachers' parlors, reading room, gymnasium 52 by 70, drill hall 62 by 76, plunge baths, etc. The interior finish will be red oak. The estimated cost is $75,000, and the building will be ready for use at the opening of school in 1900.

The entire exterior of all the buildings has been painted a light straw color.

Minnesota School.—Mr. H. H. Donnally, who has taught here for two years, has left the profession to study medicine in Columbian University. Miss Agatha M. Tiegel and Miss Nora Halverson have resigned to be married, and Miss Mary E. Griffin to teach in the Colorado School. Their places are taken by Mr. C. E. White, who taught in the Kansas School last year, Miss Edith Vandegrift, a recent graduate of Gallaudet College, and Miss Mesa Barns, formerly of the St. Louis

and Florida schools. Miss Alice J. Mott, who recently received the degree of Doctor of Philosophy from the University of Minnesota, resumes the work after an absence of two years spent in study. Miss Florence Heizer, who has been a teacher here for four years, died at her home in Mediapolis, Iowa, on August 11. She was a splendid woman and an excellent teacher.

Mississippi Institution.—Miss Anna C. Lancaster, who has been a successful teacher in the public schools of Mississippi for the past four years, has entered the Institution as a normal student and will remain during the year in that capacity.

Missouri School.—Mr. Samuel C. Bright, a valued teacher in this School, formerly a teacher in the Arkansas Institute, died July 28 at his home in Lewisburg, West Virginia. The vacancy has been filled by the election of Mr. D. C. McCue, a teacher of many years' experience, formerly connected with this School.

A blacksmith shop has been constructed at a cost of one thousand dollars, and instruction in that trade will be given the coming year.

Nebraska School.—Messrs. Norman Shreve, M. A., and Alvin E. Pope, M. A., both graduates of the University of Nebraska and of the Normal Department of Gallaudet College, have been appointed teachers in the Oral Department, and Mrs. Helen M. Drake, an experienced kindergartner, formerly inspector of kindergartens in the Omaha public schools, has been appointed principal of the Kindergarten Department. In order better to fit herself for the work, Mrs. Drake is taking a course of special training in the McCowen School.

New steam-heating and electric apparatus have been introduced; henceforth the machinery of the Industrial Department will be run by electric instead of steam power. The erection of a new schoolhouse has been begun and a new fence has been built around the grounds.

New Jersey School.—Mr. Weston Jenkins, who has been Principal of the School since its establishment in 1883 and has brought it to its present high state of efficiency, has resigned, and is succeeded by Mr. John P. Walker, a teacher of

long experience in the Pennsylvania Institution and for the past three years Principal of Morris Industrial Hall.

New York Institution.—Miss Ida Montgomery, after a successful career as a teacher in this Institution during a period of thirty-six years, retires from actual labor September 1, having been appointed to the honorary position of emeritus teacher, with an allowance of $600 per annum. In thus making liberal provision for teachers who have rendered long and faithful service, this Institution sets an example which we wish might be generally followed. In the death of Mr. Charles Wesley Van Tassell, July 19, of cancer of the duodenum, the Institution lost a valued instructor. Mr. Van Tassell had been a teacher for thirty-three years and was held in high esteem, both for his qualities of heart and his marked success as a teacher of young deaf children. Miss Fayetta Peck, for the past six years directress of the male kindergarten, has been granted leave of absence for one year to regain her health. Mr. Edward P. Clarke, M. A., late of the Utah School, and Miss Agnes March, of the New Jersey School, have been added to the corps of instruction.

The chapel of the Institution has undergone extensive alterations. A new floor has been laid and modern opera chairs have taken the place of the long wooden benches. The panellings of the platform and of the lower side walls have been replaced with new and more ornamental patterns.

New York Institution for Improved Instruction.—Mr. Harvey F. Mitchell, late Acting Principal, has been elected Superintendent, and Mr. A. E. Gruver, late in charge of the Primary Department, has been elected Principal. Miss M. E. Potwin, Mr. P. W. Carhart, Mr. B. Davis, and Miss Clara Bell have resigned their positions as teachers and the following new teachers have been appointed: Mr. Louis C. Butler and Miss M. B. Shaw, from the Pennsylvania Institution; Miss Frances Hinkley and Miss Edith Buell, from the training class of the Clarke School; Miss Margaret Worcester, from the Maine School; Miss Julia Connery, from St. Joseph's Institute, New York; Miss Elizabeth Strickland, from the training class of the Mystic Oral School, and Mr. T. F. Driscoll, a graduate of

this Institution. Miss Carrie E. Freck, of Pottsville, Pa., has been appointed substitute teacher and librarian.

North Carolina (Raleigh) Institution. — Mr. Chas. N. Williams, for some years a teacher in this Institution, has been elected to succeed the Rev. Jos. Perry as supervisor of the department for the deaf, and Mr. A. J. Sullivan, who was appointed a teacher temporarily last year, has been elected to a permanent position in place of Mrs. Rosa B. Cuffy, whose ill health last year caused her to retire.

North Carolina (Morganton) School.—Miss Nettie McDaniel, of the Alabama School, has been engaged to teach in the Oral Department, taking the place of Miss Eugenia Welch, who has leave of absence on account of ill health. Miss Carrie Stinson, who received her training in this School and has taught here three years, goes to the Washington State School.

The new school building has been completed, and will be occupied at the beginning of the session. The School has just installed a six-ton cold storage plant.

North Dakota School.—Miss Lillian W. Curd, of Fulton, Missouri, Miss Lilla McGowan, a graduate of Gallaudet College, and Mr. Walter Kilpatrick, formerly Supervisor in the Minnesota School, have been added to the corps of instructors.

A new wing has been added to the building, steam heat has been put in, and the old building has been completely refitted. The School now has room for about seventy pupils.

Oklahoma Institute.—Miss Louise K. Thompson, an experienced instructor of the deaf, has been appointed head teacher, and Miss Chettie Foster and Miss Bessie Taylor, late of the Kansas School, have been appointed assistant teachers.

Oregon School.—Mr. Clayton Wentz, M. A., formerly a teacher in the Ohio and Nebraska Institutions, has been elected Superintendent, and Mrs. Wentz, formerly a teacher in the Nebraska Institute, matron, *vice* Mr. and Mrs. Knight, retired.

Paris National Institution.—Dr. Ladreit de Lacharrière, who has been physician of the Institution for 37 years and is

the author of several valuable works relating to the deaf, has been relieved from active service. The medical service has been reorganized on a new basis, Dr. Leroux receiving the appointment of general physician, and Dr. E. Ménière that of otologist. Dr. Ménière is a son of the celebrated Dr. P. Ménière, who was the physician of the Institution from 1838 to 1862.

Rhode Island Institute.—Miss Kitty Young, of Warwick, England, who was a member of the training class last year, returns to take the place of Miss Flint, who has resigned on account of ill health. Miss Elizabeth Peet, daughter of the late Dr. Isaac Lewis Peet, takes charge of the first class, and Miss Florence Russell also comes as a teacher.

Royal Cross Institution.—A central hall and two new wings to the main building have recently been added at a cost of about $20,000, the gift of the Ven. Archdeacon Rawstorne, the first and now life chairman of the board of management. The central hall is 50 feet long by 25 broad, and has class-rooms on three sides. The class-rooms are so arranged with movable glazed partitions that they can be made an addition to the hall, thus affording seats for 500 people. The new buildings were opened with addresses from the Earl of Derby and others, July 29, 1899.

Texas School.—Miss Olivia Orr has resigned her position as teacher to be married. Mr. George A. Brooks and Mr. William H. Davis, graduates of this School and of Gallaudet College, have been appointed teachers.

A new dormitory building, with accommodations for 125 new pupils, and a new industrial building, both equipped with all necessary conveniences, are in process of erection, and considerable improvements are being made in the old buildings.

Utah School.—Mr. William S. Marshall, who began his work as a teacher of the deaf in the Indiana Institution in 1859, and has since taught in the Missouri, Iowa, and Utah schools, has retired from active labor to enjoy well-earned repose at his home in Pomona, California, where he has an orange orchard. Mr. Edward P. Clarke has resigned to accept a position in the New York Institution. These vacancies have

been filled by the appointment of Mr. Frank M. Driggs, formerly a teacher in this School and lately in the Illinois Institution, and Mr. William N. Marshall, late of the Washington State School.

A new hospital building is under construction at a cost of about $5,000.

Virginia School.—Mr. H. A. Bear, who has been a teacher in this school for more than forty years, has retired from the work, and Mr. Ezra S. Henne, late of the Illinois Institution, has been appointed a teacher. Mr. Henne assists half of each day in the senior class and the other half in the Articulation Department.

The term of instruction has been lengthened from eight to ten years.

Waratah Institution.—There is a school for the deaf at Waratah, New South Wales. It is under Catholic auspices and is supported by charitable contributions. The superintendent is Sister M. Columba Dwyer. The Combined System of instruction is followed.

MISCELLANEOUS.

A Hopeful Sign of the Times.—We trust the day will come when the continuance in office of a faithful and efficient head of a school for the deaf will everywhere be so much a matter of course as to occasion no comment in the *Annals*, as is already the case in a large part of the United States; but the history of the Indiana Institution in former years, and the more recent history of the institutions in certain other of the Central States, make the re-election of Mr. Johnson as Superintendent of the Indiana Institution for the next four years a significant fact of hopeful promise for the education of the deaf. The effort to raid the State institutions for party purposes has been no less strong in Indiana within recent years than formerly, and no less strong than in other States where it has unhappily succeeded; that it has failed in Indiana is due to the firmness of Governor Mount, who appointed a non-

partisan board of trustees, and assured them, in spite of the clamor of the spoilsmen, that he would support them in the faithful administration of their trust. The following extract from an editorial in the Indianapolis *News* states the case fairly and forcibly:

Mr. Johnson first came to the Institution sixteen years ago at a time of political turmoil, when the good rule of merit and long continuous service had for some years been broken up, and the Institution made a byword and a reproach among its class in the country for the way in which it was given over as political spoils. Mr. Johnson had the good fortune to be the first one appointed in this bad era that was able to make a stand against it, and to maintain his place, and thus the fact of his continuous service is a thing of value apart from the excellent condition that he has brought about, and the advanced stand that the Institution has taken under his management.

The re-election of Mr. Jones as Superintendent of the Ohio Institution for the next four years is also a hopeful sign; but we shall regard it as still more hopeful if, as we hope will be the case, he is again re-elected after sixteen years of service, especially if the State at that time is under the control of a different political party.

Day-Schools.—A strenuous effort was made this year to persuade the legislatures of California, Minnesota, and Michigan to enact laws authorizing the establishment of day-schools on the Wisconsin plan. In California and Minnesota the effort was unsuccessful; in Michigan the following act was passed on the last day of the session:

AN ACT

Authorizing School District Boards, Boards of Trustees of Graded Schools, and Boards of Education in Cities to establish and maintain Day-Schools for the Deaf, and authorizing payment therefor from the general fund.

The people of the State of Michigan enact:

SECTION 1. That upon application by a school district board, board of trustees of a graded school, or board of education of any city, of this State, to the Superintendent of Public Instruction, he shall grant permission to such board to establish and maintain, and such board shall thereupon be empowered to maintain within the limits of its jurisdiction one or more day-schools, having an average attendance of not less than

three pupils, for the instruction of deaf persons over the age of three years, whose parents, or guardians in the case of orphans, are residents of the State of Michigan.

SECTION 2. Any board which shall maintain one or more day-schools for the instruction of the deaf shall report to the superintendent of public instruction annually, and at such other times as he may direct, such facts concerning the school or schools as he may require.

SECTION 3. The State Treasurer is hereby authorized and directed to apportion and pay out of the "general fund" annually to the treasurer of any board maintaining a school or schools, which shall be established in accordance with this act, the sum of one hundred and fifty dollars for each deaf pupil instructed in any such school for nine months during the school year, and a part of such sum proportionate to the time of instruction of any such pupil so instructed less than nine months during each year.

SECTION 4. The money received from the State Treasurer, as provided in section three of this act, shall be kept separate and distinct from all other funds by the treasurer of the board receiving it, and shall be known as "the fund for the support of schools for the deaf," and shall be paid out for no other purpose than for the payment of salaries of teachers of schools for the deaf, as herein provided, and for school appliances, and all sums not expended under this act shall be returned to the State Treasurer and credited to the primary school interest fund.

SECTION 5. All teachers in such schools shall be appointed and employed as other public school teachers are appointed and employed. All persons appointed to teach in any such school shall have had special training for teaching, and shall also have had special training in the teaching of the deaf, including at least one year's experience as a teacher in a school for the deaf. The so-called "oral" system shall be taught by such teachers, and if after a fair trial of nine months, any of such children shall for any reason be unable to learn such oral method, then no further expense shall be incurred in the effort to teach such child so unable to learn such oral method in such primary schools.

SECTION 6. For the purpose of this act, any person of sound mind, who, by reason of defective hearing, cannot profitably be educated in the public schools, as other children are, shall be considered deaf.

This act is ordered to take immediate effect.

At a meeting of the Board of Education of Brooklyn, New York, held July 5, 1899, a committee, of which Mr. H. A. D. Hollman was made chairman, was appointed to consider the desirability of establishing classes for the deaf in the public schools of that borough.

Conventions of the Deaf.—The Sixth Convention of the National Association of the Deaf was held at St Paul, Minne-

sota, July 11–14, 1899. It was a large and enthusiastic meeting. The Constitution and By-Laws were revised and many resolutions relating to the interests of the deaf were adopted. Mr. James L. Smith, of Minnesota, was elected President and Mr. Thomas F. Fox, of New York, Secretary. A full report of the proceedings is given in the *Deaf-Mutes' Journal* of July 20.

Successful conventions of State associations were also held during the summer in Maine, Missouri, New Hampshire, New York, and Pennsylvania.

The Church Mission.—The Church Mission to Deaf-Mutes, New York, has received $70,000 for the benefit of the Gallaudet Home, as part payment of a legacy from the estate of Charles H. Conoit.

A Paris Congress in 1900.—Mr. Picard, Commissioner General of the Paris Exposition of 1900, has appointed a committee of organization for a "Congress for the Study of Questions of Education and Aid of Deaf-Mutes." The committee, at a meeting held July 3, 1899, decided that the Congress should consist of two sections, one composed of friends and teachers of the deaf, and the other of the deaf themselves. Of the first section, Mr. Colmet d'Aage has been appointed President, and Dr. Ladreit de Lacharrière, Secretary; of the second section, Mr. Dusuzeau is President, and Mr. Henri Jeanvoine, Secretary. The Congress will be held August 6–8, 1900. The American members of the committee on the programme of the Congress of the Deaf have organized with the Rev. Austin W. Mann as chairman and Mr. George W. Veditz as secretary.

Helen Keller.—Miss Helen A. Keller has passed the final examinations for admission to Radcliffe College, the requirements for which are identical with those for admission to Harvard. This time the examinations were taken without the intervention of an interpreter, the questions being presented in American Braille. Though Helen labored under the disadvantage of having no previous acquaintance with this form of

the alphabet, being accustomed only to the English Braille, she passed the examination successfully in every study, receiving special credit in advanced Latin and the high mark of "B" in advanced Greek. Mr. Joseph Edgar Chamberlin, whose interesting sketch of "Helen Keller as She Really Is" was printed in the June number of the *Annals*, writes in the *Boston Evening Transcript* of August 5:

> The question may well be asked, Will Helen Keller now take the regular college course? Who will interpret to her the lectures in foreign languages which she cannot hear? No one can do this. No lecture, even in English, can be translated to her in the manual alphabet as rapidly as it is spoken. Her usual interpreter knows no foreign tongue. Who will read to her all the required matter of the courses of reading, none of which has been put into raised print? It is beyond mechanical possibility to give her all this through her fingers. The obstacles appear insurmountable. But that is the principal reason why Helen Keller is inclined to surmount them.

The Deaf in Japan.—Dr. Frederic H. Wines has received from the Prison Association of Japan a copy of the rules governing the Japanese prisons, printed in Japanese and English, in parallel columns. Article I divides the prisons into six classes, of which the sixth is the *Chojijo* or "Educational house," which "is appointed for the correction of the infants and dumb exempt from penalty." By the "dumb" are probably meant uneducated deaf-mutes, who are regarded as irresponsible on account of their misfortune, and therefore incapable of committing crime.

A New French Periodical.—A periodical published monthly, except in August and September, and entitled *Revue Générale de l'Enseignement des Sourds-Muets*, has been begun by the instructors of the National Institution at Paris. "It will be," says the prospectus, "freely open to the discussion of all processes and all methods; an arena where the most opposite and contradictory theories may have a fair field. The greatest courtesy will temper the heat of polemics, and absolute liberty of argument will have as a counterpoise absolute respect for individuals." The *Revue* is handsomely printed in the printing office of the Institution; the price is 6 francs a

year. Subscriptions may be addressed to M. l'Administrateur de la Revue Générale de l'Enseignement des Sourds-Muets, 254, Rue Saint-Jacques, Paris, France.

ADVERTISEMENTS.

A gentleman of long experience in oral teaching, at present engaged in one of the first schools in the United Kingdom, seeks an opening in the United States. He possesses good government reports and can furnish excellent references. Address P. O. S., care of the Editor of the *Annals*, Kendall Green, Washington, D. C.

Wanted, by a trained articulation teacher of some years' experience, a position as governess to a deaf child. Good references. Address A. Z., care of the Editor of the *Annals*, Kendall Green, Washington, D. C.

Mr. J. HEIDSIEK'S "Hearing Deaf-Mutes. A contribution toward the Elucidation of the Question of Methods," translated from the German by George W. Veditz, M. A., and published in the *Annals* for April, June, and September of last year, has been reprinted in pamphlet form. Copies may be obtained from the Editor of the *Annals*, Kendall Green, Washington, D. C., at 25 cents each, postage included.

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PROCEEDINGS OF THE WORLD'S CONGRESS OF INSTRUCTORS OF THE DEAF and of the Thirteenth Convention of American Instructors of the Deaf, held at Chicago, Illinois, July 17, 19, 21, and 24, 1893, price one dollar; to subscribers to the *Annals*, half price. Add 11 cents for the prepayment of postage. Address the Editor of the *Annals*, Kendall Green, Washington, D. C.

Mr. JAMES DENISON'S "Manual Alphabet as a Part of the Public-School Course," published in the *Annals* for October, 1886, has been reprinted in pamphlet form, accompanied by the beautiful manual alphabet drawn and engraved from photographs under the direction of Dr. J. C. GORDON. Copies may be obtained from the Editor of the *Annals*, Kendall Green, Washington, D. C., at ten cents each, postage included.

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The AMERICAN ANNALS OF THE DEAF is published six times a year, appearing in the months of January, February, April, June, September, and November. The subscription price is $2.00 a year, payable in advance. For Great Britain and Ireland the price, postage included, is 8s. 6d.; for Germany, 8½ marks; for France, 11 francs, all which may be sent through the postal money-order office. Subscriptions and all other communications relating to the *Annals* should be addressed to the Editor,

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